A DIFFUSION OF INNOVATIONS MODEL APPLIED TO FAMILY PLANNING EDUCATION IN HONDURAS

BY

EMITA T. DOHERTY

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by

Emita T. Doherty

This dissertation is dedicated to my parents, Ondina and Greg Gaboury for their love so freely given; to my children, Andre and Nicole; and to my brother, George.

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by

Emita T. Doherty

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The purpose of this study was to determine the extent to which E. M. Rogers' diffusion of innovations model explained the differences between family planning adopters and family planning resistors from a sample of indigent Honduran women. Using the chain referral method and a convenience sample of mothers at a public hospital, the investigator interviewed 92 Honduran women. She used frequency counts, chi square, and correlation coefficients to analyze the data and the 0.05 level of significance and beyond to test group differences.

One hundred percent of the study participants knew of the contraceptive pill as a family planning method. Fewer knew of other methods.

Ninety-seven percent of the interviewees felt that couples should use family planning to space pregnancies, but 36% felt that using planning methods was too difficult.

Eighty-one percent perceived that contraceptives were potentially more harmful than pregnancy or childbirth.

Adopters and resistors of planning methods did not differ significantly by religious affiliation, religiousness, conflict with religious beliefs, or perceived approval of others. The two groups differed significantly on other variables: Consistent with the diffusion of innovations model, resistors of family planning (innovation adoption "laggards") appeared less advantaged than adopters. Women over 29 years of age who had never used a planning method had had significantly more pregnancies, more living children, and had experienced more child deaths. They also had fewer years of schooling and were more likely to be in a consensual union than married.

Rogers' model predicted that when people understand an innovation poorly they often misuse the innovation which contributes to negative beliefs about it. In this study all artificial means of birth control were rumored to be carcinogenic, and a large number of study participants believed that the pill and intrauterine devices were ineffective. Failure rates for these two methods was high.

The study findings indicate that family planning education must go beyond simply informing women on the availability of birth control methods. Educational leaders must design programs that inform women on how methods work, and perhaps more important, family planning education must address negative beliefs regarding planning methods.

CHAPTER I
INTRODUCTION

The underdeveloped countries of Latin America, for five decades, have experienced rapid population growth. Demographic expansion continues at rates that developing country economies cannot support, and natural resources are dwindling at an alarming rate. Family planning education, or dissemination of family planning information, is usually a necessary component of fertility decline. However, in spite of efforts in this direction, some populations are still doubling about every 20 years. If family planning education is to be effective, the administrators who direct these programs must understand that segment of the population at which the information is directed. Too often educational messages miss their target because administrators have not been sensitive to the incongruence of the educational program with the needs of the audience.

So critical is the problem of population growth in parts of Latin America that some governments have launched mass media campaigns to persuade women to space and to limit births. Honduras has taken such action since the late 1960s. Yet, many women have not been convinced that the advantages of family planning outweigh the disadvantages. In terms of

Everett Rogers' (1983) diffusion of innovations model, the first step of the diffusion process, awareness, started for the indigent Honduran population about 25 years ago. But adoption of family planning has proceeded slowly. As will be seen in the description of the diffusion model (Chapter II), the adoption of innovations involves several stages, each of which can require a different educational method and focus.

The adoption of family planning methods to limit births in developing countries that are experiencing rapid demographic expansion is difficult when culture and traditions combine with misunderstanding and fears surrounding fertility-regulating methods. Therefore, when designing family planning messages intended to influence women's behavior, education leaders must examine the congruence among (a) informal family planning information, (b) mass media messages, and (c) the beliefs and norms that are held by women of a particular culture.

Paul (1955) wrote that before asking a group of people to assume a new behavior, one should ascertain the existing behavior and habits, what functions they serve, and what they mean to those who practice them. Educators and other change agents would be wise to heed Paul's insight that a given occurrence, item of information, or physiologic event is not the same event for all people. Paul explained that observers located at different points in social space perceive the world from the perspective of their particular communities, classes, or occupations. Thus what the health educator defines as good or desirable may be viewed quite differently by the potential recipients of the health care innovation.

The results of two surveys carried out in Honduras on large random samples found that 18-20% of women in union did not use family planning methods because they feared them or did not like them (Honduras, 1981; Honduran Ministry of Health, 1986). However, reportedly high abortion rates suggested that women who were not using planning methods (or not using them effectively) wanted to limit their family size. Adoption of family planning methods is low even in the urban areas of Honduras where low-cost government-sponsored services are available. Honduran social workers interviewed by the investigator in 1986 indicated that the reasons for nonadoption of family planning by indigent women were psychological. Bogue (1983) referred to these as "normative costs" and defined them as "the attitudes and beliefs that imply a negative evaluation of contraceptive use, or the cultural, social, and psychological forces that influence individuals and couples not to begin contraceptive practice or to abandon it after a brief trial" (p. 153). Some important aspects of psychological costs that may be influencing the adoption of family planning methods in Honduras appeared to be negative beliefs, rumors, and poor understanding of how the methods work. Negative beliefs fall under part of Bogue's definition of normative costs. Whereas

Bogue's definition was broader, encompassing psychological forces as, for example, modesty, negative beliefs were beliefs that imply a negative evaluation of fertility-regulating methods.

Rumors are unconfirmed messages passed from one person to another in face-to-face interaction (Buckner, 1965, p. 55). Rumors may be positive or negative, but in the context of the proposed study they were generally negative. A rumor may become a negative belief. The belief that the contraceptive pill caused cancer was an example of a rumor that had become a commonly held negative belief. Misconceptions related to fertility may be affectively neutral, but may have a negative impact on the use of regulatory methods. For example, the belief that a woman cannot conceive while breastfeeding (lactating) could be an emotionally neutral notion that has resulted in a number of unexpected pregnancies.

Family planning is a relatively new idea for the uneducated in developing countries. Thus, it can be considered an innovation. According to Everett Rogers' (1983) model of diffusion of innovations, the adoption of an innovation involves predictable phases. Obtaining information either through programs of planned change, or through informal channels is the first stage in the adoption process. Rumors can be considered part of the natural evolution of understanding a complex innovation. But, when the planned change is not effectively communicated, the innovation is often not well understood in terms of what it does and how it works. Distrust and suspicion are characteristic reactions to this situation, resulting in the rise of confusion, rumors, and fears.

Rumors about the dangers of fertility-regulating methods, misinformation that is actively propagated by the right and left political groups in Honduras could add to the emotional cost of fertility regulation. On the left, Latin American Marxists view population planning as a weapon of imperialists--a tactic to divert attention from inequality and underdevelopment (Consuegra, 1974). On the right, the Catholic Church is joined by the political conservative groups such as the military and the business community in opposing interference with population growth out of concern that an ever-growing body of consumers is good for business, and also fears of being over-run by more populous or powerful neighboring countries, particularly El Salvador and Nicaragua.*

Statement of the Problem

While government-sponsored family planning messages promote the desirability and acceptance of family planning by conferring legitimacy, the issue of perceived health risks and other negative perceptions associated with various family planning methods are rarely, if ever, addressed. Educational programs must address women's fears in this regard. The design of such programs must be launched with a clear view of the cultural context from which these reactions arise--the prevailing beliefs, values, and taboos that predispose individuals to adopt or reject a particular innovation. Until the psychological blocks are addressed, family planning information programs may be ineffective in promoting the adoption and sustained use of fertility regulation methods by a large proportion of indigent Honduran women.

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*The threat from these neighboring countries may not be as great today as it once was. For instance, Nicaragua, today, far from powerful, is a devastated country, and is now less populated than Honduras. Contrary to popular belief, however, the Church's position on birth control plays only a minor role in deterring would-be Latin American family-planners (Honduras, 1981; Miro, 1963, 1966; Stycos, 1967, 1974; Herold, Westoff, Warner, and Seltzer, 1989).

In sum, mass media campaigns have been effective in informing women that methods for limiting births are available and accessible, but a different kind of educational program may be needed to complete the knowledge stage, the persuasion stage, and the implementation of the innovation, family planning.

Purpose of the Study

The purpose of this study was to determine the extent to which Rogers' model of diffusion of innovations explained differences between family planning adopters and family planning resistors in a sample of indigent Honduran women. Family planning adopters and resistors were compared by socio-economic and other variables related to the innovation adoption process. This process includes knowledge of the innovation, persuasion that the innovation is better than its alternatives, decision to try the innovation, implementation of the decision, and confirmation of the individual's choice to adopt or not adopt the innovation.

Research Questions

In order to develop relevant fertility education programs for indigent women, the effects of existing educational messages and the characteristics of family planning resistors must be examined. Everett Rogers' model distinguished between types of innovation information and information delivery in terms of its credibility and persuasiveness. The model also predicted that individuals who were late adopters of innovations shared socio-demographic and other characteristics. In addition, according to Rogers' model, misconceptions and rumors surround innovations that are poorly understood. The following questions flowed from this perspective:

1. Is there a relation between indigent Honduran women's knowledge of family planning methods and
    a) the number of family planning messages recalled; and
    b) the number of sources of information reported?
2. Is there a difference in women's recall of family planning messages by characteristics of message delivery such as

  - a) pictorial poster messages;
  - b) radio message;
  - c) gender of message narrator;
  - d) message intent: public health versus commercial?

3. What is the relation of attitudes regarding family planning methods to adoption of planning methods?
4. What is the relation of negative beliefs regarding family planning methods to the implementation of methods?
5. How are the beliefs that a family planning method is ineffective, and the perceived degree of ineffectiveness, related to implementation of planning methods?
6. How are beliefs that a family planning method is a threat to health, and the perceived degree of the threat, related to implementation of the method?
7. Is there a difference between family planning adopters and resistors by social psychological characteristics on
   - a) communication with spouse;
   - b) religiosity;
   - c) aspirations for children;
   - d) fatalistic outlook?

8. Is there a difference between family planning adopters and resistors by the socio-demographic characteristics of
    a) years of schooling;
    b) type of sexual union;
    c) number of pregnancies, child deaths, and number of living children;
    d) religion?

The level of significance employed for statistical differences was 0.05.

Background and Justification

> The human population explosion, and its declining spiral of natural resources is . . . the greatest threat of all. The time is ripe, even dangerously over-ripe, as far as the population problem is concerned. We shall have to face up or ultimately perish, and what a dreary, stupid, unlovely way to perish, on a ruined globe stripped of its primeval beauty. (Lowell Sumner cited in Erlich, 1968, n.p.)

Sumner issued this warning more than 20 years ago. But Malthus (cited in Flew, 1979, p. 74) described the oncoming crisis of population explosion almost 200 years ago: "population, when unchecked, goes on doubling itself . . . or increases in geometric ratio . . . the means of subsistence increases in an arithmetical ratio."

The developing countries of the world have not followed the European demographic transition pattern, which predicted that birth rates would fall following a decline in death rates (Beaver, 1975; Notestein, 1945). But Coale (1973) foresaw that birth rates would remain high even after a drop in death rates. The magnitude of the gap between birth rates and death rates has not been appreciated until relatively recently, however. Mortality rates have fallen precipitously in the developing world, but they have not been accompanied by sustained social and economic gains, and fertility has remained high. This has led to rapid demographic expansion, the demands of which have begun to exceed the sustainable yield of local forests, croplands, and other natural resources. Population projections for those less developed countries (LDCs) where life support systems are already disintegrating are said to be "projections of disaster" (Brown, 1987, p. 23).

A clear example of the pattern of rapid demographic expansion due to declining mortality is seen in Central America. For instance, Honduras, one of the poorest countries in the Western Hemisphere, is experiencing one of the fastest rates of population growth in the world; doubling about every 22 years. Even if Honduras immediately reduced its fertility by an average of two children per family, growth would continue for another 70 years due to population momentum. The Select Committee on Population explained that population momentum occurs because a population which has experienced rapid growth contains many young couples who will reach childbearing years (Select Committee on Population, 1978). Such a rapid pace of demographic expansion has a negative impact on the economic development of the country (Soazo & Aplicano, 1984). Some of the consequences of Central America's population growth are high unemployment rates, underemployment rates of about 60% (Rosenberg, 1984), and increased political conflict (Diaz-Briquets, 1986). A consequence of this scenario, of concern to the United States, is illegal immigration to this country. The ill effects of rapid population growth for a developing country such as Honduras are many. In addition to unemployment, illiteracy, at close to 50%, becomes increasingly difficult to combat, health care needs strain the national budget, and the building of an infrastructure necessary for economic development is impeded.

At the more human level, the effects of high birth rates on women, children, and families are no less deleterious. The relationship between high parity (births) and poor health is well known: The incidence of low birth weight increases significantly (Illsley & Mitchell, 1984; Puffer & Serrano, 1975), as does morbidity (Paine, Werry, & Quay, 1968; Wray, 1971) and mortality (Puffer & Serrano, 1973) for both mother and child. Another burden on indigent women is that a large proportion of them are the sole source of financial support for their offspring (a situation that contributes to begetting more children). While laws have been passed to facilitate maternity leave and breast feeding for employed women, these often backfire. Some employers are extremely reticent to hire women of child-bearing age.

In spite of increasing landlessness in the rural areas, unprecedented urbanization, and disintegration of the nuclear family, fertility in Honduras remains high. Some of the factors that exist in Honduras and tend to perpetuate high fertility are these: About 66% of the population is rural, making school inaccessible to many; women have few job opportunities; an Iberian cultural heritage where "machismo" still reigns is matched by modesty in the women and there is a tradition of consensual unions which tend to be less stable than legal marriages. These are conditions that change slowly even in the face of major social and economic advances.

Even though there is increasing government interest in reducing population growth, fewer than 35% of Honduran women in union reported that they were currently using family planning methods (Honduran Ministry of Health, 1986). Yet the attitude that family size, or at least passive acceptance of unwanted pregnancies, is changing is suggested by a reportedly high rate of abortions. (Since abortions are illegal except for medical reasons, the real prevalence of abortion is not known.) The Catholic Church in Honduras has accused ASHONPLAFA, the Honduran Family Planning Association, of performing 25,000 abortions a year (W. Schwainfurth, personal communication, September 26, 1989). Abortion is widespread (Asociación Multidisciplinaria de Investigación y Docencia en Población, 1980; Oberg, 1971) and has been one of the principal methods used to avoid live births in Latin America (Acuna, 1975; Requena, 1968). Its health consequences are serious--about one-third are followed by life-threatening medical complications (Viel 1982), which contributes to the fact that abortion has been the most frequent cause of death in young women (Illich, 1971).

Significance of the Study

Preliminary findings indicated that indigent women desired smaller families than they were having and felt very positively toward the idea of family planning. The majority of women in union were not using planning methods--the reasons they gave were largely related to negative beliefs about the available forms of contraception. The population-education benefit of this study was the identification of prevalent negative beliefs and specific informational needs that must be filled for unschooled Honduran women to adopt family planning methods.

Design of the Study

Following a review of previous knowledge, attitude, and fertility practice studies, this investigator developed a structured interview instrument to assess the knowledge, beliefs, attitudes, and family planning practices of indigent Honduran women. The study sample was a convenience sample of indigent women from urban Honduran neighborhoods obtained using the chain referral method and women from a public hospital post-partem ward. Ninety-two mothers agreed to participate after being approached and were interviewed for about an hour.

Limitations of the Study

1. Because the sample consisted of volunteers, some inherent bias may have been introduced into the study. Individuals who agreed to participate, particularly when the chain referral method of sample selection was used, may have had more knowledge and a more positive attitude toward family planning than a more representative sample would have displayed. Thus, the use of a volunteer sample limits generalization to other groups.

2. The sample was comprised primarily of residents of an urban area of Honduras. Therefore, the characteristics of this sample may not be generalizable to a population that would include a large proportion of rural women.

3. The interview protocol was not tested for validity and reliability.

4. The data were difficult to evaluate statistically, at times, due to their nominal nature, structured item response categories, and small cell sizes.

Definition of Terms

The terms used in this study are defined as follows:

Adopters of family planning refers to women who have tried a family planning method.

Consensual union is cohabitation by an unmarried couple for an extended period of time (Haupt & Kane, 1980, p. 7).

Contraceptives are agents or devices used to prevent conception. The definition refers to medically approved methods such as injectable progestin, birth control pills, intra-uterine devices, condom, diaphragm, and spermicides (Hatcher et al., 1988, p. 151).

Contraceptive discontinuers are women who at one time used a contraceptive, have made a conscious decision to discontinue using it, and do not intend to resume using it. Some investigators use the term "disadopters" as synonymous with the term discontinuer.

Contraceptive nonadopters are women who have never used a family planning method.

Demographic transition is the historical shift of birth and death rates from high to low levels in a population. The decline in mortality usually precedes the decline in fertility, thus resulting in rapid population growth during the transition period (Haupt & Kane, 1980, p. 7).

Exponential growth is a constant rate of growth applied to a continually growing base over a period of time (Haupt & Kane, 1980, p. 7).

Family planning is the conscious effort of an individual or couple to regulate the number and spacing of births. As used in this thesis, it is synonymous with practicing birth control, and does not include efforts to induce pregnancy.

Family planning method refers to methods of contraceptive use (see p. 15). Since 1.6% of respondents to a scientific survey (Honduras, 1981) reported using coitus interruptus and 1.6% reported using rhythm, these latter two are included as family planning methods. Douche and the various "fertility awareness" methods (Hatcher et al., 1988, p. 364) are not being considered in the definition of family planning methods.

Fertility refers to the number of pregnancies that a woman has had. The term does not refer to reproductive potential or fecundity.

Indigent women are women presumed to be economically disadvantaged by virtue of occupation, neighborhood of residence, or use of public health care facilities.

Infant mortality rate is the number of deaths of infants under 1 year of age in a given year, per 1000 live births in that year.

Married women in this study refers to those living in consensual unions as well as those formally married by the church or state.

Misconceptions are erroneous beliefs of cause and effect. Misconceptions can be psychologically neutral as in the case of the belief that lactation protects a woman from pregnancy. Rumors may give rise to misconceptions and misconceptions may become negative beliefs.

Morbidity is the state of being diseased.

Need refers to a lack of something necessary. In this study, it encompasses want of information, of acceptance, and of reassurance if the educational messages have led to conflicting values.

Negative beliefs are beliefs that imply a negative evaluation of fertility-regulating methods. Two examples of negative beliefs: Only prostitutes use contraceptives; the IUD causes deformities in children.

Parity refers to the number of viable pregnancies a woman has delivered.

Rate of natural increase is the rate at which a population is increasing in a given year due to a surplus of births over deaths, expressed as a percentage of the base population (Haupt & Kane, 1980, p. 12).

Resistors refers to women who have never used a family planning method.

Rumor is "an unconfirmed message passed from one person to another in face-to-face interaction that refers to an object, person, or situation rather than an idea or theory" (Buckner, 1965, p. 55). In this study rumor also refers to unconfirmed messages passed on by public media sources.

In union is synonymous with being in consensual union and with being married.

Visiting union refers to a sexual relationship which does not include long-term cohabitation as in consensual unions.

This study is organized to first orient the reader to the context of rapid population growth in Honduras and to explain why it is a problem. Chapter II summarizes the orientations of different disciplines explaining how population growth comes about and how it is perpetuated and attenuated. Chapter II also introduces Rogers' model of diffusion of innovations applied to family planning education. The methodology used in the study is described in Chapter III. In Chapter IV, the key concepts of Rogers' diffusion of innovations model are related to adoption of family planning methods by the study participants. The qualitative data analysis in Chapter V supplements the quantitative findings presented in Chapter IV. In Chapter VI, resistance to family planning is related to learning theories and to Rogers' model of diffusion of innovations. Chapter VII is a summary of the findings and the educational implications of the study.

CHAPTER II
REVIEW OF THE LITERATURE

Introduction

This chapter contains a background of concerns over population growth in the less developed countries (LDCs) and a summary of theories that have evolved from various disciplines to explain fertility behavior. Finally, fertility decline is viewed from the perspective of adoption of an innovation.

One view of the causes and cures of population growth is that held by the Marxists. They believe that economic development alone will solve the problem of population growth. This position, which stems from demographic transition theory, predominated at the world population conference in Bucharest in 1974 (Finkle & Crane, 1975). However, a decade later, at the United Nations second global population conference, developing countries had shifted from the position that a new economic order would solve their population problems to a focus on the urgency of making family planning services universally available (Finkle & Crane, 1985).

Unfortunately, the factors that contribute to fertility decline are not simple; this has given rise to many theories and theoretical frameworks for understanding family size decisions. The disciplines of demography, economics, sociology, and psychology have all made significant contributions to these theories.

Demographic theories of fertility change were derived from historical observation and preceded the economic theories of the 1960s and 1970s. Demographic transition theory holds that high fertility rates result from high morbidity and predicts that when mortality rates fall, fertility, after a lag, will also fall. This was the pattern that was followed by the industrialized countries which Coale and Hoover (1958) explained in terms of the effects of modernization. The theory of demographic transition, however, is based on the European experience and is not an appropriate model for today's developing countries. For many reasons (outlined by Teitelbaum, 1975) the sustained high fertility of the less developed countries could not have been predicted from the experience of the industrialized world. For instance, unlike the industrialized nations, mortality has declined in today's developing countries because of public health intervention by the wealthier nations, not because of profound social and economic advances within the developing countries. The tendency to project the fertility pattern of developed nations onto underdeveloped countries is a weakness that some might blame on the ethnocentricity of some advocates of demographic transition theory (Weeks, 1978).

Economic models of fertility have been used to predict such occurrences as optimum population (Sauvy, 1969), the economic effects of an aging population (Espenshade, 1978), and the economic consequences of morbidity and mortality (Preston, 1977). Microeconomic fertility theory focuses on couples' decision making regarding family size in terms of costs (monetary costs, opportunity costs, and time), benefits, preferences, and "quality" of children (Becker, 1960, p. 214).

Sociological perspectives of the determinants of fertility emphasize the social supports and institutional patterns that perpetuate high fertility (Davis, 1955). Reproductive behavior is explained in terms of motivations and attitudes that are influenced by social norms and customs. A frequently quoted framework is that of Davis and Blake (1956), whose determinants of fertility were based on variables such as reproductive potential, age of marriage, availability of family planning methods, and use of abortion. Other sociologists focused on access to contraceptive knowledge and supplies, emphasizing constraints that the social system imposed according to socioeconomic divisions (Brown, 1982).

Leibenstein (1974) and Easterlin (1978) combined sociological and economic theories. Leibenstein wrote that economic and social changes cannot be viewed in isolation, that economic shifts cause changes in social status and lead to conflicts between desires for children and desires for other goods that compete with children. In developing his theory, Leibenstein created the concept of social influence groups as determinants of family size. This theory holds that couples belong to socio-cultural groups that influence living standards and family size preference.

Easterlin integrated the sociologist's emphasis on the nature and determinants of fertility regulation with the economist's emphasis on the couples' decision to have children, including unwanted ones, and the extent of fertility regulation that will be practiced. By Easterlin's analysis fertility is determined through one or more of the following:

> (1) desired family size: the number of surviving children parents would want if fertility regulation were costless;
> (2) the potential supply of children: the number of surviving children parents would have in an unregulated fertility regime; and
> (3) the costs of fertility regulation: both subjective (psychic) costs, and objective costs, such as time and money required to learn about and use specific techniques. (p. 130)

According to Easterlin, the immediate determinants of desired family size are income, and the price of children relative to goods and tastes, or the utility function for children and goods. Easterlin noted that "it is through tastes or subjective preference that some of the attitudinal considerations and measures stressed by sociologists operate such as norms regarding family size and quality of children" (Easterlin, 1978, p. 130). Easterlin's theory held that when the potential supply of children exceeds demand, parents are confronted with the possibility of having unwanted children and are then motivated to regulate their fertility.

The motivation to regulate fertility is counterbalanced, however, by the cost of fertility regulation. In addition to market costs, psychic costs or conflicts may be associated with aspects of fertility control. These psychic costs are central to the adoption of family planning methods, for they are embedded in the social norms of a culture and in the belief system that is a part of the culture.

Bach (1967) commented that demography, in dealing with the events of human life, such as birth, marriage, illness, and death, disregarded the individual. This position is corroborated by Smith (1973) who observed that in contrast with the socio-demographic perspective of fertility, which concentrates on articulations within social systems, the social psychological approach implies attention to individual behavior as an "interactive product of personal dispositions and situational properties" (p.4). Smith was critical of the Davis and Blake framework for boxing fertility change into exhaustive intercourse variables, conception variables, and gestation variables. Smith's point was that gestation is not purely biological and that the psychological variables cannot be ignored, for each step of the reproductive process is potentially influenced by psychological factors such as motives, attitudes, habits, intentions, and decisions.

The conceptual frameworks mentioned emphasized different components of fertility behavior, and most of them treat fertility as an aggregate phenomenon. But demographic changes are preceded by decisions made on an individual level. Psychological influences must be examined in order to understand why certain groups of women persist in having large families in spite of obvious disadvantages in doing so. The strong influence of psychological factors on fertility-related decisions becomes evident when viewed within the framework of Rogers' model of diffusion of innovations. This model has been applied extensively in agriculture and marketing. Its relevance to family planning has been increasingly recognized.

Adoption of Family Planning as a Diffusion Process

In many of the developing countries, even today, the idea of limiting births or of practicing family planning is a relatively new one for the indigent. As such, the use of family planning methods, or of contraceptives, can be considered an innovation, and as illustrated by Rogers, persuading others to adopt a new idea even when it has obvious advantages, is often very difficult.

"Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1983, p. 5). Diffusion, as a type of communication, is special in that it concerns a new idea which, by nature of its newness, involves some uncertainty. Diffusion results in social change, for as ideas diffuse and are adopted or rejected, certain consequences occur.

The diffusion of innovations process has been described by Barnett (1953), Everett Rogers and Shoemaker (1971), Brown (1982), and Everett Rogers (1973, 1983). Barnett's definition of an innovation is ". . . any thought, behavior, or thing that is new because it is qualitatively different from existing forms" (p. 7). He adds, "Strictly speaking, every innovation is an idea, or constellation of ideas; but some innovations, by their nature, must remain mental organizations only whereas others may be given overt and tangible expression" (p. 7). Retherford and Palmore (1983) characterized innovations and "discontinuous" or "continuous" (p. 296). Discontinuous innovations were described as dramatically new while continuous innovations were felt to be modifications of something that already exists. Barnett might dispute these distinctions as he maintained that all innovations have antecedents. Nevertheless, for the indigent of Honduras, contraception might be considered a discontinuous innovation as methods of preventing conception do not appear to have been used in the past. As a discontinuous innovation, contraception would be more difficult to adopt than a continuous innovation would be.

E. Rogers (1983) wrote of four main elements in the diffusion of innovation: the innovation, communication channels, time, and a social system. The communications aspect of innovations pivots on the new idea being passed from those who know about it to those who do not. Communication involves networks, and Marshall (1971) noted that networks are topic specific. For instance, the informal network to communicate a new treatment for children's diarrhea would be quite different from the informal network concerning an agricultural innovation. Not only are there many communication channels as a function of the topic, but diffusion of acceptance of an innovation may have different dynamics from those of simply information regarding the innovation.

The adoption of an innovation takes place over time. Cumulative frequencies of adopters plotted over time produce an S-shaped curve. The diffusion curve climbs as increasing numbers of people adopt the innovation, and then the trajectory of the rate of adoption begins to level off as fewer and fewer individuals remain who have not yet adopted the innovation.

The diffusion of ideas takes place within a social system. Elaborating on this concept, Barnett explained that conditions external to individuals affect their innovative potential, for cultural constructs are often beyond human will or effort. We all begin with a body of ideas and behaviors that have been assembled and integrated by predecessors. "The . . . orientations of this traditional inventory inevitably have a determinative effect upon the interests, the competencies, and the innovative potentials of the members of any society" (Barnett, 1953, p. 39). Rogers (1983) defined the social system as a set of interrelated units engaged in joint problem-solving to accomplish a common goal. Brown's view was more closely aligned with Barnett's and contrasts with Rogers' in that Brown minimized the importance of differences between individuals, preferring to place the determinants of diffusion almost entirely on the social system. Brown emphasized the individual's status in the social structure as the central factor in who adopts innovations. His point was that the opportunity to adopt the change is egregiously unequal, and that conditions for adoption or accessibility to the innovation are not equally distributed among members of society. Stycos (1967), one of the earliest researchers on obstacles to family planning in Latin America, focused on other aspects of the social system: the family structure, the sharing of goals and knowledge, the degree to which the sexes are segregated, patterns of dominance, stability of conjugal bonds, norms concerning cross gender discussions of intimate topics, and the articulation of the family with other social institutions.

The social system and the diffusion process are mediated through the system's norms, its opinion leaders, and the consequences of the innovation for that social system. For example, the social system's norms, and all that norms encompass--beliefs, values, and attitudes--are of paramount importance for innovations that are of a sensitive nature. Within these constraints, with the exception of only a few societies, the decision to adopt family planning is an individual one. Rogers acknowledged the complexity of this decision; therefore, his model of the innovation-decision process was particularly appropriate to study the adoption of fertility regulation methods.

The Innovation Decision Process

An understanding of the innovation-decision process is crucial for change agents in every field. Rogers (1983) described it as follows:

> [It] is the process through which an individual . . . passes from first knowledge of an innovation forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. This process consists of a series of actions and choices over time through which an individual evaluates a new idea . . . this behavior consists essentially of dealing with the uncertainty that is inherently involved in deciding about a new alternative to those previously in existence. It is the perceived newness of the innovation and the uncertainty associated with this newness that is a distinctive aspect of innovation decision making. (p. 163)

Rogers outlined five sequential stages of the innovation-decision process: knowledge, persuasion, decision, implementation, and confirmation. The Honduran family planning radio messages (Appendix A) illustrate the emphasis placed on the desirability of family planning and availability of methods to put planning into practice. This general awareness of the idea of family planning and some planning methods fall under the knowledge phase of the innovation-decision process. However, the low rate of adoption and high discontinuance of planning methods suggest that all five stages of the adoption process should be emphasized.

Knowledge Stage

The innovation-decision process begins when an individual becomes aware of the existence of the innovation. Understanding how the innovation works is also part of the knowledge stage.

Views differ on whether the awareness of a need or the awareness of a particular innovation comes first. According to some, an innovation cannot be sought until the individual is aware that it exists, and therefore one becomes aware of an innovation quite by accident. The opposing view maintains that awareness of innovations is not passive. This latter perspective is particularly salient to family planning education. It holds that individuals have predispositions that influence their behavior toward communication messages. While McGuire (1968) disputed the validity of the concept of selective exposure, Rogers believed that people have a tendency to expose themselves primarily to messages that are consistent with existing beliefs and attitudes, and avoid those messages that cause conflict. As Rogers viewed it, we consciously or unconsciously avoid that essential initial ingredient to change that Hensel (1980) referred to as "dissatisfaction with present practices" (p. 2). The human tendency to avoid psychic discomfort could be a particularly relevant factor to consider when attempting to influence groups of women whose awareness of family planning may come largely through mass media messages.

Rogers (1983) differentiated "how to" and "principles" knowledge (p. 167). How to knowledge is necessary in order to use an innovation properly. Principles knowledge has to do with how the innovation works; this type of knowledge can be viewed as a continuum, and for many technical innovations, little principles knowledge is necessary to influence adoption of the innovation. Photography, television, and microwaves are examples of widely used, but often poorly understood, innovations. However, in the case of family planning methods, some principles knowledge may be essential in order to use them effectively.

A number of studies in family planning have illustrated that both "how to" and principles knowledge are exiguous among indigent women. In Columbia, a country with one of the strongest family programs in Latin America, 58% of a sample of contraceptive pill users reported incorrect use of the pill in a 2-week period (Potter et al., 1988). Inadequate knowledge of how to use the contraceptive pill correctly may account for the high accidental pregnancy rates also reported by Laing (1974).

Principles knowledge is even more elusive than how-to knowledge, and the paucity of principles knowledge could be related to rumors of the dangerous properties of various fertility regulating methods. Erroneous beliefs about all methods can be found in most parts of the world. Some of these may appear as outrageous and even amusing. However, if one considers the rudimentary knowledge that most unschooled individuals have regarding anatomy and physiology, beliefs that may appear strange are sometimes quite logical.

Bertrand, Pinedo, and Soto (1978) found that for their Guatemalan sample, knowledge of contraceptive methods and use of methods were positively correlated, but a wide gap existed between awareness of methods and use of those methods. This gap is clearly illustrated in a fertility survey carried out in Honduras (Honduras, 1981). Of women in union, 93% were aware of at least one contraceptive method, but only 27% were using a method. Data from Costa Rica presented similar findings (Asociacion Demografica, 1978).

One explanation for the gap between knowledge of family planning methods and the use of methods is offered in the Rogers model. Attitudes toward innovations intervene between knowledge and decision functions. The formation of these attitudes is part of the second stage in the innovation-decision process.

Persuasion Stage

Where the individual goes for information and what information is received are important at the persuasion stage. At this point, the individual assesses the relative advantage, compatibility, and complexity of the innovation. Information-seeking then continues throughout this stage in order to reduce uncertainty about the innovation. Applied to family planning in developing countries, Rogers' persuasion stage begins in the less literate population with informal exchanges between women regarding the perceived effectiveness of contraceptive methods and their perceived potential threats to health. Since physicians are infrequently consulted by indigent Honduran women for these purposes, sometimes their only source of contraceptive information is other women.

The result of the persuasion stage is the formation of a favorable or unfavorable attitude toward the innovation. Rogers pointed out, however, that adoption of the innovation often does not follow even when there is a positive attitude toward it. Slow adoption is particularly true when the innovation is preventive in nature, as is the case in family planning.

The Decision Stage

The decision stage follows the persuasion stage. At this third stage in adopting an innovation a choice is made to adopt or reject the innovation. If the innovation permits, it may be tried on a small-scale basis. As an example of trialability, Rogers cited the free trial of a new weed spray for farmers.

Implementation follows the decision stage in the process of adopting an innovation. Up to now, the adoption process has been mental, but the implementation phase requires a behavior change.

Uncertainty still exists at this point, making the adopters continue to seek information. The implementation stage ends when the new idea becomes an institutionalized and regularized part of the adopters' ongoing operation.

The Confirmation Stage

The confirmation stage is the fifth and last stage in the innovation adoption process. Now the individual seeks reinforcement of her decision, whether that decision was to adopt or to reject the innovation. At this point, it is important that change agents provide support for adopters. When this support is absent, negative rumors about the innovation may lead to its discontinuance. Rogers explained that those who were late adopters of the innovation are more likely to be discontinuers because they, more commonly than early adopters, misuse innovations and therefore find them less effective or less advantageous.

The Attributes of Innovations

Characteristics of potential adopters influence the rate of adoption for the innovation. Rogers described five attributes of innovations: a) relative advantage, b) compatibility, c) complexity, d) trialability, and e) observability. Rogers stressed that the potential adopters' perceptions of these attributes are important for it is these perceptions that will influence their behavior.

Relative Advantage

Relative advantage refers to perception of the innovation as a better alternative than the condition or situation it would supersede. A sort of cost benefit evaluation of the innovation enters into its assessment as advantageous. Ownership of some innovations confers status, but status tends to be far less important to late adopters than it is to early adopters.

Some subdimensions of relative advantage are (a) degree of economic profitability, (b) low initial cost, (c) decrease in discomfort, and (d) the immediacy of the reward. Rogers pointed out that these aspects of relative advantage partially explain why preventative innovations are less readily adopted than others. Applying Rogers' description of relative advantage to family planning, the initial (normative) cost is high if women fear that family planning methods are harmful, and the normative cost of adoption may continue to be high if the method causes its adopter real or perceived health problems. In opposition to these nonadvantages are rewards (births, family difficulties, and expenses averted) that refer to an event (pregnancy) that might or might not occur.

Compatibility

Rogers referred to compatibility as the degree to which an adopter perceives an innovation as consistent with his or her existing values, past experiences, and needs. An idea that is compatible carries less risk to the potential adopter; therefore, compatibility as perceived by members of a social system is positively related to its rate of adoption.

The widely held erroneous belief that Catholicism is a major obstacle to the adoption of family planning in Latin America is an application of the concept of compatibility. While researchers have found the Church's influence to be weak in this matter, other values ingrained in the Hispanic culture work to make family planning incompatible. One of these values is the idea that a woman's primary function is to bear and raise children, and that women should accept "all that God sends." In terms of past experiences, as recently as 15 years ago infant mortality was high in Honduras, a fact that would also work to make family planning incompatible. On the other hand, the poor economic growth of the 1980s and high unemployment, particularly in La Ceiba, would make family planning consistent with economic needs.

Complexity

Complexity refers to the perceived difficulty in understanding and using an innovation. Rogers referred to studies that indicate that complexity is the most significant aspect of innovations leading to their nonadoption. The role that complexity played in the sample women's nonadoption or discontinuance of contraceptive methods is covered in Chapter V.

Trialability

Trying the innovation is part of the decision stage. An innovation has trialability if it can be adopted in small increments. This sort of experimentation on a limited basis reduces uncertainty for the potential adopter; therefore, trialability is positively related to rate of adoption. A significant aspect of trialability in the discussion of family planning is that peers who have adopted the innovation may act as a psychological or vicarious trial for later adopters. This is particularly true in cultures or subcultures where women readily discuss birth control issues. "Vicarious trial" came through clearly in interviewees' statements of their beliefs regarding contraceptives (Chapter V).

Observability

Observability is the degree to which others can see the results of having used the innovation. It is positively related to adoption of innovations. However, in the case of family planning, observability, in terms of other women's believed or actual bad experiences, may work against adoption.

Innovativeness and Adopter Categories

For the middle class in Latin America family planning is not a new idea. Therefore, informational programs aimed at persuading couples to have small families are directed primarily at the large socio-economically disadvantaged segment of the population. But in order for educators (change agents) to deliver effective information, they must know the characteristics of their audience. Rogers (1983) characterized individuals in terms of their innovativeness or the degree to which they adopt new ideas relatively early.

Innovators (first to adopt) are venturesome and have the resources to absorb losses from a poor investment. Their social relationships are cosmopolite. In Honduras innovators would correspond to the privileged classes. Many have studied abroad and keep abreast of new ideas via foreign television programs and magazines.

Following innovators are the early adopters described by Rogers as localites and opinion leaders. In the small communities that characterize Honduras, this group might have ample associations with innovators.

After the early adopters come those whom Rogers termed the late majority. Individuals in the late majority adopt new ideas after the average member of the social system.

They view innovations with caution and the weight of the system's norms must definitely favor the innovation before the late majority are convinced that it is desirable. Even though these individuals see the utility of the new idea, peer pressure is necessary to motivate adoption. Uncertainty must be low before the late majority feel that it is safe to adopt the innovation.

The greatest challenge to population programs are those whom Rogers labeled the "laggards" (p. 120). They are described as being near isolates in social networks and focused on the past. They are suspicious of innovations and of change agents. Compared to early adopters, laggards have fewer years of schooling, and lower social status as indicated by occupational prestige and income. Laggards are more likely to be dogmatic, are less able to cope with uncertainty, have a less favorable attitude toward education, are more fatalistic, and have lower aspirations. Late adopters have less social participation, less change agent contact, and less exposure to the mass media. They are less persuaded by accounts that the innovation was tested by credible scientists, preferring to rely on the subjective experiences of their peers.

In summary, chapter II is an overview of some demographic, economic, and sociological theories of population growth. These theoretical oriculations, however, often disregard decision making on an individual basis as a prerequisite for fertility decline. In contrast, Rogers' model of diffusion of innovations and the innovation adoption process emphasizes how individuals come to view an innovation as advantageous and how this may eventually lead to its adoption. Of particular relevance to educators are the various stages of the innovation adoption process, each of which implies a different educational process and focus.

Chapter III describes the methodology employed to determine the extent to which Rogers' diffusion of innovations model predicted differences between family planning adopters and planning resistors in a sample of indigent Honduran mothers.

CHAPTER III
METHODOLOGY AND INSTRUMENTATION

This research was conducted to determine the extent to which Rogers' model of diffusion of innovations explained differences between family planning adopters and family planning resistors in a sample of indigent Honduran women.

Setting

The study was conducted in La Ceiba, located on the North coast of Honduras and the country's fourth largest city. La Ceiba's population is about 110,000 and, due to rural urban migration in combination with natural growth, is increasing in size at about 4% a year (Demographic Yearbook, 1984). The great majority of inhabitants are a mixture of Spanish and Indians. A small minority of residents are descendants of Afro-Caribbeans. In 1981 urban fertility was about half that of the rural areas but still remained high at 4.1 births per woman (Honduras, 1981, p. 35). The proportion of women engaged in income-generating activities was about 41% (Honduras, 1981).

Development of the Interview Instrument

The interview instrument used in this research project (Appendix B) was adapted from a survey carried out in Egypt in 1981 and 1982 to assess the prevalence of negative contraceptive beliefs (Barcelona, 1983). The original survey instrument was designed by Dr. Donald Bogue, Director of the Community and Family Study Center at the University of Chicago.

The instrument was altered by this investigator for the purposes of this project in the following ways:

1. Items were added to measure the number and types of family planning messages that women recalled.

2. The focus was oriented toward variables that conformed to Rogers' (1983) model of diffusion of innovations. In this light, items that related to knowledge of fertility-regulating methods went beyond simply recording methods that women said they had heard of, to women's understanding of how the methods worked (principle knowledge). Since predisposition was felt to affect "selective attention" (Rogers, 1983, p. 166) which, in turn, influences awareness and understanding, items related to predisposing factors such as perceived social acceptability of family planning were included.

3. Where possible, items pertaining to conditions or circumstances that were not necessarily amenable to change by relatively brief educational programs were omitted; for example, the communication channels the interviewee followed after hearing a rumor about a fertility-regulating method. On the other hand, some variables that are not readily changed, but that are basic to understanding fertility

behavior, were included, as for example, the influence of religion and fatalistic attitude or tendency to perceive that life events are externally controlled.

4. The questionnaire was expanded to capture beliefs related to fertility regulating methods used in Honduras. A prior study (Honduran Ministry of Health, 1986) indicated that the number of users of regulatory methods was as follows: contraceptive pill (12.7%), tubal ligation (12.1%), intrauterine device (3.8%), rhythm (2.9%), withdrawal (1.7%), and injectable progestins (0.3%) (Honduran Ministry of Health, 1986). While the use of injectable progestins was low, it was included in the survey because of its potential as an ideal method of fertility regulation for Hispanic women, perhaps especially in the less accessible rural areas.

5. Some questionnaire items were added as a result of discussions with Honduran social workers. Interviews with social workers in the summer of 1986 revealed that it was they who often tried to persuade overburdened women to use birth control. At the primary health clinic in La Ceiba it was the social worker who conducted talks for female patients to introduce them to fertility regulating methods. Through the social workers, the investigator became aware of the widely held belief that the contraceptive pill is carcinogenic. Other questionnaire items flowed from the literature search.

6. In order to avoid the distortion of responses that occurs when interviews are overly structured, and to be consistent with the suggestions of Stycos (1954; 1981), and Bailey (1987) regarding research on sensitive subject matter, many open-ended items were added to the survey instrument. In addition, where indicated, questionnaire items were supplemented with spontaneous questions that arose from the interview interaction as recommended by Foster and Nixon (1975).

The interviews were carried out by the investigator who was born and reared in Honduras. Each interview lasted approximately 1 hour.

Research Design

Overview

The study was a descriptive survey to provide information useful for designing more effective family planning education programs. Descriptive research methods were used to outline the existing family planning information transmitted by mass media sources, to elucidate the influence of negative beliefs on fertility behavior, and to delineate the characteristics of women who had attempted adopting family planning methods and those who had not.

An underlying assumption was that all women were exposed to family planning radio messages. Therefore, in quasi-experimental terms, the design was a one-group, posttest-only design (Cook & Campbell, 1979). This design was accidental as it was a given condition of the setting where the study took place. The investigator did not intend to make causal inferences, but rather to describe existing conditions that are relevant to designing family planning education programs.

The dependent variable in this study was the adoption of family planning methods or attempted adoption by women in union who had had at least one child. The major independent variables were recall of family planning messages, attitudes, negative beliefs toward family planning methods, and the socio-demographic and social-psychological variables. It was recognized, however, that some of the independent variables such as attitude and knowledge of methods could also be dependent variables.

Quantitative data are useful for determining factors that correlate positively or negatively with adoption of family planning methods but often leave a gap in understanding why these relations exist. Therefore, in agreement with Firestone (1987) that qualitative and quantitative methods are complementary, the data collection included a large qualitative component in addition to the quantitative. Given the nature of this investigation, the qualitative component may be the more important one.

Presampling Procedure

Upon arriving in La Ceiba, the investigator made an appointment with the Director of Public Health in order to explain the purpose of the study and to obtain permission to carry it out. She also obtained permission to conduct interviews from the director of the public hospital. She gave officials formal letters of introduction from the chairman of her dissertation committee at the University of Florida.

The interview was pretested on three women in the United States to obtain an initial idea of the flow of questions and time involved in conducting the interview. In Honduras the investigator pretested it again on one indigent woman to ensure that the wording would be understandable to women of little schooling and, again, to get an idea of the time involved in conducting an interview. This first interviewee determined what would be a fair gratuity for time spent with the investigator.

Sample Selection and Sample Size

Ideally, a random sample procedure would have been carried out which divided the country into geographic regions with random selection of rural and of urban centers within regions, random selection of households, and, finally, random selection of eligible women within households. However, the ideal sampling procedure required financial resources far beyond the limitations of this study.

The "snowball method," also known as "chain referral sampling" (Bailey, 1987, p. 95) requires that in the initial stages a few persons having the requisite characteristics are identified and interviewed. These persons are then asked to identify others who might be interested in participating in the study. These persons are interviewed and asked to recommend others and so on.

The chain referral sampling method is especially useful in studying groups that are difficult to access (Burgess, 1982; Hoffman, 1980; McCall, 1980; West, 1980) and was therefore appropriate for this study given its potentially sensitive nature. As with the informal survey (Rhoades, 1985) which is similar, the chain referral approach is useful to better understanding of socio-econological conditions (Oasa, 1985) that underlie behavior. Issues of reliability and validity are inherent in any nonprobability sampling procedures. Honigman (1982) acknowledged this and explained that nonprobability methods are appropriate for the study of cultures and communities, where each informant or subject, in some degree, reveals consistencies. Honigman added that judgment and opportunistic samples in fieldwork are predicated on the researcher's primary interest in the system of behavior rather than in the distribution in a known universe.

Ninety-two subjects were interviewed. The chain referral method of sample selection was discontinued after the first 33 subjects were obtained because of very heavy rains that made the "contact" neighborhood, steep with hills and mud, inaccessible. Also, many poor neighborhoods were on the fringes of the cities, thus taxi travel was required to reach them. Once in the neighborhood the investigator was limited to no more than three interviews because each gratuity weighed 5 pounds. Women in the neighborhood whose names were obtained by referral were often not at home, and no telephones were available with which to make appointments. Most importantly, the investigator was concerned that the sample might be biased and that "worst off" women were not being captured using the chain referral method.

Fortunately, a 3-week strike at the local public health hospital was terminated, and the investigator was able to obtain subjects from the post-partem ward. Because the hospital strike was sensitive and carried the potential for violence, the hospital guard suspected the investigator might be an (unwanted) reporter. Entrance to the wards was guarded by a soldier holding a machine gun, but presentation of letters of "permission" from the health officials eased the tension.

As with most study settings, the post-partem ward presented its own unique obstacles to obtaining a study sample. Mornings were not available for interviewing because discharges to home occurred at that time, and visiting hours also precluded interviewing. The post-partem hospital stay was short because women who had delivered prior to midnight were discharged in the morning. Also, because women were hospitalized only for the immediate post-partem hours, they were often in pain or indisposed due to lack of fluids or more serious effects of birthing. Newborns were kept at their mother's side, their crying and other needs often disrupting the interview.

Although these problems were potentially serious, they were not insurmountable. The distractions of home discharges and visitors were reduced by carrying out interviews at night. Only women who appeared to be comfortable were approached to be interviewed, and the investigator was able to put to use her experience with post-partem patients to help new mothers meet their infants' needs so the interviews could proceed.

All study participants were offered a gratuity upon completion of the interview. The first 35 participants obtained through the chain referral method, received a 5-pound package consisting of rice, beans, lard, salt, candles, and soap. A different gratuity was offered to the post-partem patients who participated in the study. This was because they frequently had an urgent need for fluids (there was nothing to drink out of; therefore, water was difficult to obtain on the ward), and they were often very hungry. In addition, because the hospital issued no supplies to patients, many mothers had an urgent need for diapers and other necessities. Therefore, the gratuity for post-partem patients consisted of their choice of bottled drinks and snacks, or other needed supplies.

While the appropriateness of offering a gratuity has been disputed by some anthropologists, others have found it to be a useful practice (Chen and Murray, 1976). For this project, the gratuity presented no problems and was extremely well received.

Interview Procedure

Because indigent Honduran women have had little schooling, it was essential to keep the explanation for the research as simple and as brief as possible. The introductory statement made to each potential interviewee explained that the investigator was writing "a thesis, which is like a book," on the subject of what Honduran women thought about family planning and what they felt they needed to know about it.

The interviewer stressed anonymity of responses. She showed subjects that only a number, but no name, appeared on the papers containing their responses. She made them aware that only she had the identification code and that she kept this code separate from their responses.

She advised potential interviewees of the time involved in conducting the interview. She told subjects that at the conclusion of the interview she would give each a gratuity, and described the gratuity. She emphasized that the gratuity was a gift, not payment for their participation in the study.

No time restrictions were placed on respondents who had much to say. Where the questions were open ended, the investigator recorded responses verbatim.

Data Analysis

The questionnaire items consisted primarily of nominal and ordinal scale variables. Therefore, data analysis included primarily frequency counts, percentages, cross tabulations, and chi square as a measure of association. Spearman Rank Correlation Coefficient and, where appropriate, analysis of variance was also used.

Cross classification by nominal and ordinal variables can be used to answer a variety of questions. For example:

> Is there a relationship between number of family planning messages recalled and family planning adoption?
>
> Is there a relationship between strength of negative beliefs and family planning adoption?
>
> Do family planning adopters differ from resistors by socio-demographic variables?

Liebetrau (1983) faults chi square as a measure of association stating that meaningful interpretation of the statistic is difficult. However, Reynolds (1984) and Runyon-Haber (1972) favor it as a standard for deciding whether two categorical variables are statistically independent. Some limitations of chi square are its sensitivity to sample size (Edwards, 1961) and its requirement that no category have an expected frequency of less than 5.

Chapter III described the setting and methodology for this study. Using the chain referral method and a convenience sample of indigent post-partem patients, 92 women were interviewed by the investigator. The study was conducted in La Ceiba, Honduras, a city of approximately 110,000 inhabitants. Chapter IV describes the results of the quantitative data analysis.

CHAPTER IV
PRESENTATION OF THE RESULTS

The purpose of this study was to determine the extent to which Rogers' model of diffusion of innovations explained differences between family planning adopters and family planning resistors in a sample of indigent Honduran women. The two groups were compared on knowledge of family planning methods, exposure to public media sources of family planning information, attitudes, and beliefs regarding planning methods, and other variables related to the innovation adoption process.

Characteristics of the Sample

The socio-demographic characteristics of the women interviewed reflect that they represented a lower socio-economic status. As illustrated in Table 1, the study participants had little schooling, were employed in low skill level jobs, and the majority were in consensual unions. Most of the sample was drawn from women in a post-partem ward, which contributed to the large proportion of women under 29 years of age.

Because the characteristics of interviewees in the under-30 age group were different from those of participants over

Table 1

Sociodemographic Characteristics of the Study Population

	Number	Percent
Age		
16-29	66	71.7
30-39	17	18.5
40-49	9	9.8
	92	100.0
Marital Status		
Married	30	32.6
Consensual union	41	44.6
No union	21	22.8
	92	100.0
Schooling		
None	1	1
1 to 3 years	16	17
4 to 6 years	53	58
More than 6 years	22	24
	92	100
Occupation		
Homemaker	46	50
Domestic help	27	29
Factory	1	1
Temporarily unemployed	1	1
Other (seamstress, cashier)	17	19
	92	100
Religion		
Catholic	45	49
Protestant	36	39
No preference	11	12
	92	100

29 years of age, the age groups have been separated in the tables when relevant.

The mean number of children for women 30-49 years old was 5.0 (Table 4). This mean increased to 6.2 for women 40-49 years of age (Table 4).

Twenty-eight percent of the study participants had experienced at least one child death and 16% had experienced multiple child deaths (Table 3). Seventy-three percent of the multiple deaths occurred to women who had had seven pregnancies or more.

Table 2

Numbers of Living Children for the Study Population

All ages category*			30-49 years old**		
Number	Frequency	Percent	Number	Frequency	Percent
1-2	48	52.1	1-2	3	11.5
3-4	23	25.0	3-4	6	23.0
5-6	15	16.0	5-6	11	42.3
7-8	4	4.3	7-8	4	15.3
9-10	1	1.1	9-10	1	3.8
11	1	1.1	11	1	3.8
	92	99.6		26	99.7

*Total number = 285, Mean = 3.3
**Total number = 139, Mean = 5.4

Table 3

Numbers of Deceased Children for the Study Population

All ages categories*			30-49 years old**		
Number deceased	Frequency	Percent	Number deceased	Frequency	Percent
0	66	71.7	0	12	42.6
1	12	13.0	1	4	15.4
2	7	7.6	2	5	19.2
3	3	3.3	3	1	7.7
4	2	2.2	4	1	3.8
5	1	1.1	5	1	3.8
6	1	1.1	6	1	3.8
	92	100.0	35	26	100.0

*Mean = 0.59
**Mean = 1.35

Table 4

Desired Family Size and Actual Family Size for the Study Population

	16-29 year-olds	30-39 year-olds	40-49 year-olds
Desired family size			
Mean	3.00	3.83	4.66
Surviving children			
Mean	2.21	5.06	6.22
Excess births			
Mean		1.23	1.56

Table 4 illustrates that desired family size decreased with age of interviewees. Women of age 40-49 wanted an average of 4.66 children. Women under 30 wanted an average of 3.00 children. The mean number of births for women over 30 exceeded their preferred family size.

Further examples of the significance of separating the age groups is that 80% of the women over 29 years stated that they wanted no more children and more than twice as many women in the over-30 age group than the under-30 group gave the "up to God" response for number of children desired (Table 5). Separating the age groups also revealed that while 43% of the respondents under 30 stated they would like their children to attend the university, only 15% of the interviewees of age 30 or more had university aspirations for their children (Table 6).

Table 5

Study Population: Desire for More Children

	All ages		30-49 year olds	
	Frequency	Percent	Frequency	Percent
Want no more	53	58	21	80.0
Want more	33	36	2	7.7
What God sends	5	5	3	11.5
Don't know	1	1	0	0
	92	100	26	99.2

Table 6

Study Population: Educational Aspirations for Children

	Entire sample		30-49 year olds	
	Frequency	Percent	Frequency	Percent
1-3 years schooling	3	3	2	.08
4-6 years schooling	14	15	4	.15
Secondary 1-3 years	1	1	1	.04
Secondary 4-6 years	37	40	15	.58
University	33	36	4	.15
Don't know	4	4	0	0
	92	99	26	100

Note. The sum of proportions is not equal to 100 due to rounding.

A surprising finding was that only 49% of the interviewees stated that they were Catholic (Table 1). And contrary to studies in other parts of the developing world, only 2% of the interviewees felt that children added to the family's economic well being (Table 7). Ninety-three percent of the interviewees stated that children were an economic burden.

Table 7

Study Population: Perceived Economic Utility of Children

	Frequency	Percent
Economic burden	85	93.4
Increase well being	2	2.2
Have no economic effect	3	3.3
Don't know	1	1.1
	91	100.0

Research Question One

Is there a relation between indigent Honduran women's knowledge of family planning methods and the

a) number of family planning messages they recall, and

b) number of sources of information they reported.

For this study, knowledge of family planning methods was defined as

number of methods mentioned spontaneously,
number of methods recognized by prompting, and
number of methods used.

Methods Mentioned Spontaneously and with Prompting

Women's knowledge of family planning methods was measured by asking, "From television, radio, posters, and other sources, what methods of preventing pregnancy are you aware of?" When methods were not mentioned spontaneously, interviewees were asked if they had ever heard of the method.

Only one woman did not mention the contraceptive pill spontaneously, but recognized it as a contraceptive method with prompting. Other methods were less well known.

Use of Methods

Thirty six percent of the women in the sample had never used a contraceptive method; 18% were practicing a family planning method at the time of the interview. Sixty-four percent had used at least one method; 21% had used two methods; 5% had used three or more methods. (Among the women interviewed using the chain referral sampling method, 18% were family planning resistors, but among the sample of women drawn from the post-partem ward, 46% were resistors). The proportion of study participants who mentioned planning methods spontaneously and the proportion who had used those methods is illustrated in Figure 1.

Relation of Knowledge of Methods to Number of Messages Recalled

The subjects reported having heard a total of 178 family planning messages through the public media. Sources of information were television, radio, and newspaper and other public service communications such as posters and clinic chats by social workers. There was a statistically significant positive correlation between the number of family planning methods mentioned spontaneously and the number of public media family planning messages recalled (Table 8).

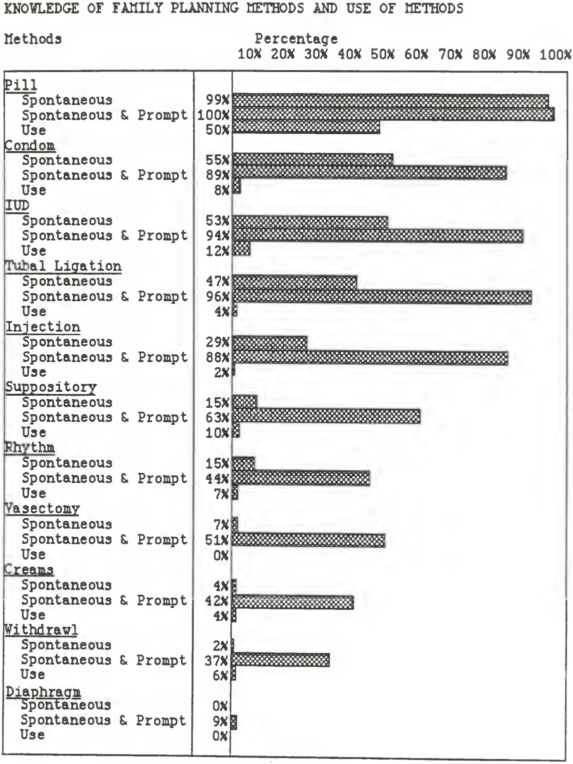

Figure 1. Contraceptive methods by the proportion of interviewees who mentioned them spontaneously and by proportion of interviewees who used them.

Number of Family Planning Messages Recalled and Number of Public Media Sources Reported by Number of Family Planning Methods Mentioned Spontaneously

The number of family planning methods mentioned spontaneously also correlated positively with the number of sources from which messages were heard (Table 8).

Table 8

Spearman Correlation Coefficients for Number of Family Planning Methods Mentioned Spontaneously, and Number of Methods Recognized by Prompting, by Number of Messages Recalled, and Number of Media Sources of Information

	Methods Mentioned Spontaneously	Methods Mentioned with Prompting
Number of Messages Recalled		
Correlation	.2855*	.1402
Probability	.0058	.1826
Number of Sources Reported		
Correlation	.20417*	.10049
Probability	.0509	.3406

*$p < .05$.

Number of Family Planning Messages Recalled and Number of Media Sources Reported by Number of Family Planning Methods Recognized After Prompting

There was no significant correlation between Methods recognized by prompting and either number of messages recalled or number of media sources reported (Table 9).

Table 9

The Relation of Number of Family Planning Messages Recorded, Media Sources Reported, and Use of Family Planning Methods

	n	%	Mean	SD	SE
Messages					
Adopters	33	36	1.9090	1.4655	0.2551
Resistors	59	64	2.3729	1.2020	0.1565
t = -1.6389	d.f.=90		sig.=.10.		
Sources					
Adopters	33	36	1.0606	0.7044	0.1226
Resistors	59	64	1.3051	0.5649	0.0735
t = 1.8195	d.f. = 90		sig. = .72.		

Number of Family Planning Messages Recalled and Number of Media Sources Reported by Family Planning Adopters and by Family Planning Resistors

Sixty-four percent of the study participants had tried the contraceptive pill and/or some other method of family planning. Taking use of methods as knowledge of methods, a t-test comparing adopters with resistors on number of messages recalled and number of media sources reported revealed no difference between the two groups at the 0.05 level of significance (Table 9).

Research Question Two

Is there a difference in women's recall of family planning messages by medium of message delivery?

a) pictorial poster messages

b) radio messages

c) gender of message narrator

d) message intent: commercial verses public health

It became evident early in the data collection that the medium of message delivery categories would have to be revised. Few women reported having seen poster messages and several reported having received family planning information at the health clinic charlas (talks). Therefore an "other" category was created that included poster messages and talks.

Surprisingly, television could be found in many of the poorest houses in the La Ceiba area. Where there was no electricity, televisions were operated from car batteries. Those who did not own a television set went to the homes of neighbors to watch programs. Thus a television category was added to medium of message delivery. Figure 2 illustrates that television had surpassed radio as a favorite medium.

Eleven percent of the messages recalled could not be traced to a media source. Of the ten interviewees whose

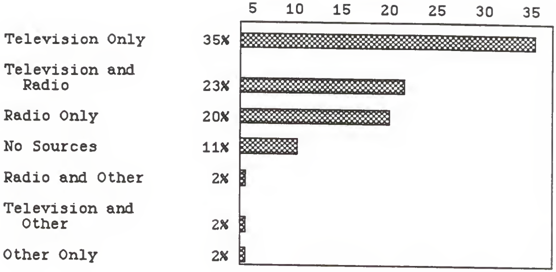

Figure 2. Percentage of messages recalled by media sources.

messages could not be traced to a media source, four stated that they had never heard a planning message over the public media. The other six were not clear what medium the messages they had reported were associated with.

Recall of Messages by Gender of Message Narrator

In Honduras, the most frequently promoted family planning methods over the public media are the contraceptive pill and the condom. Pill messages are delivered by both male and female narrators, but condom messages are delivered by only male narrators. The frequency with which the study sample recalled family planning messages by gender is illustrated in Table 10.

Table 10

Number and Proportion of Messages Recalled by Gender of Message Narrator

	Number	Percent
Male narrator	89	50
Female narrator	54	30
Both male and female	19	11
Not applicable	16	9
Total	178	100

Recall of Messages by Message Intent

Again, once the data collection started, it was evident that categories set forth in the research proposal needed revision. In addition to commercial and public health messages, there were many general family planning messages and also anti-method messages. An example of a general family planning message was "Couples should space their children in order to educate them better." An example of an anti-method message was "Women who take the [contraceptive] pill do not live beyond the age of 42."

Most of the messages recalled by the women interviewed were commercial. The distribution of messages recalled by intent is illustrated in Table 11.

Table 11

Frequency and Proportion of Messages Recalled by Intent of Messages

	Frequency	Percent
Commercial messages	88	48.9
Public health messages	40	22.2
General family planning messages	37	20.6
Anti-method messages	15	8.3
	180	101

It was evident both from the investigator's tape of radio messages (Appendix A) and from radio messages heard by the investigator while in La Ceiba that the majority of family planning messages broadcast were commercial. A chi square test for equal exposure to messages by characteristics of message delivery suggests that exposure by these characteristics was not equal (Table 12). Because exposure to messages by characteristics of message delivery was unequal, it was not possible to determine whether characteristics of message delivery (media, gender of narrator, and message intent) were related to recall of messages. Therefore, additional chi square tests were carried out to ascertain whether characteristics of message delivery was related to women's favorable reception of or agreement with messages. They were (Table 13). Interviewees agreed significantly more with public health messages and least with commercial and anti-method messages.

Table 12

Test of Equal Exposure to Messages by Media Source, Gender of Narrator, and Type of Message

	Observations	Chi square	Significance
Media sources	1	41.911	< .001
Gender of narrator	1	79.393	< .001
Type of message	1	62.225	< .001

Table 13

Chi Square Tests of Subjects' Agreement with Messages by Media Source, Gender of Narrator, and by Message Intent

Frequency Expected Percent Row Percent Col Percent	Television	Radio	Television and Radio	Total
Agree				
Frequency	58	42	17	117
Expected	61.25	39.26	26.49	78.52
Percent	38.93	28.19	11.41	
Row Percent	49.57	35.90	14.53	
Col Percent	74.36	84.00	80.95	
Not Agree and Don't Know				
Frequency	20	8	4	32
Expected	16.75	10.74	4.51	21.48
Percent	13.42	5.37	2.68	
Row Percent	62.50	25.00	12.50	
Col Percent	25.64	16.00	19.05	
Total	78 52.35	50 33.56	21 14.09	149 100

Chi square = 1.078 d.f. = 1 p. = 0.299

Seventeen percent of the cells have expected frequencies of less than 5. Chi square may not be a valid test.

Table 13--Continued

	Male Narrator	Female Narrator	Male and Female	Total
Agree				
Frequency	71	44	17	132
Expected	72.52	44	15.48	81.48
Percent	43.83	27.16	10.49	
Row Percent	53.79	33.33	12.88	
Col Percent	79.78	80.48	89.47	
Not Agree				
Frequency	18	10	2	30
Expected	16.48	10	3.52	18.52
Percent	11.11	6.17	1.23	
Row Percent	60.00	33.33	6.67	
Col Percent	20.22	18.52	10.53	

Chi square = 7.81 d.f. = 1 p. = 0.377

Seventeen percent of the cells have frequency of less than 5. Chi square may not be a valid test.

Table 13--Continued

	Public Health Messages	General Family Planning Messages	Commercial Message	Anti-Method Message	Total
Agree					
Frequency	36	32	65	11	144
Expected	32	29.6	70.4	12	80
Percent	20.00	17.78	36.11	6.11	
Row Percent	25.00	22.22	45.14	7.64	
Col Percent	90.0	86.49	73.86	73.33	
Not Agree Includes Don't Know					
Frequency	4	5	23	4	36
Expected	8	7.4	17.6	3	20
Percent	2.22	2.78	12.78	2.22	
Row Percent	11.11	13.89	63.89	11.11	
Col Percent	10.00	13.51	26.14	26.67	
Total	40 22.22	37 20.56	88 48.89	15 8.33	180 100

Chi square = 5.238* d.f. = 1 p. = .022

Twenty-five percent of the cells have frequencies of less than 5; therefore, chi square may not be a valid test.

Research Question Three

What is the relation of attitudes regarding family planning to the implementation of planning methods?

One hundred percent of the study participants agreed that couples who want to avoid pregnancies should practice family planning. Because such a great majority of interviewees gave positive responses to many of the attitude items, it was not possible to test for differences between family planning adopters and resistors on those items (Table 14). Differences between the two groups, where comparisons were possible, are illustrated in Tables 15, 16, 17, and 18. Because of its potential influence on attitude toward family planning, perceived approval of others was measured. Interviewees were asked if spouse, mother, closest sister, and closest friend would approve of their using planning methods. The only approval variable that came close to significance was approval of spouse (Table 16). Notably, family planning adopters and resistors did not differ on whether family planning was against their religious beliefs (Table 17) and were not different on their assessment of family planning as good, bad, or a combination of both (Table 18).

Table 14

Social Psychological Variables and Attitudes Toward Family Planning

Questionnaire Items 131, 132, 127, 129, 126, 134	Agree %	Disagree %	Don't Know %
A woman can limit her family to whatever size she desires.	100	0	0
Couples who want to avoid pregnancy should use family planning methods.	100	0	0
It is a good idea to practice family planning in order to limit family size.	98.9	1.1	0
Abortion can be so dangerous as to cause a woman's death.	98.9	0	1.1
It is a good idea to practice family planning in order to space children so they are not born too close together.	96.7	2.2	1.1
Couples with good jobs and salaries practice family planning.	96.7	2.2	1.1

Table 15

Chi Square Test of Attitudes Toward Family Planning by Adopters and Resistors

Item 128: Some methods of family planning are more dangerous to a woman's health than pregnancy and childbirth.

		Resistors	Adopters	Total
Agree	Count	25	45	70
	Tot pct	28.7	51.7	80.5
	Row pct	35.7	64.3	
	Col pct	83.3	79.0	
Disagree		5	12	17
		5.8	13.8	19.5
		29.4	70.6	
		16.7	21.1	

Chi square = 0.238 d.f. = 1 sig. = .626

Item 126: Taking measures to avoid pregnancy is too difficult.

		Resistors	Adopters	Total
Agree	Count	12	20	32
	Tot pct	13.6	22.7	36.4
	Row pct	37.5	62.5	
	Col pct	40.0	34.5	
Disagree		18	38	56
		20.5	43.2	63.6
		32.1	67.9	
		60.0	65.5	

Chi square = 0.257 d.f. = 1 sig. = .612

Table 16

Chi Square Test of Perceived Approval of Others by Family Planning Adopters and Resistors

Item 153. I am going to read you a list of persons whose opinion may be important to you. I will ask you if you think each one of these persons would approve, disapprove, or be indifferent to your using family planning methods.

		Resistors	Adopters	Total
Spouse approves	Count	21	51	51
	Tot pct	25	62.0	86.9
	Row pct	28.8	71.2	
	Col pct	77.8	91.2	
Spouse disapproves		6	5	11
		7.1	6.0	13.1
		54.6	45.5	
		22.2	8.8	

Chi square = 2.878 d.f. = 1 sig. = .090

		Resistors	Adopters	Total
Mother approves	Count	18	50	68
	Tot pct	23.7	65.8	89.5
	Row pct	26.5	73.5	
	Col pct	81.2	92.6	
Mother disapproves		4	4	8
		5.3	5.3	10.5
		50.0	50.0	
		18.2	7.4	

Chi square = 1.901 d.f. = 1 sig. = .168

Table 16--Continued

	Resistors	Adopters	Total
Closest sister approves	24 32.4 33.8 100.0	47 63.5 66.2 94.0	71 96.0
Closest sister disapproves	0 0 0 0	3 4.1 100.0 6.0	3 4.1

Chi square = 1.481 d.f. = 1 sig. = .224

Note. Fifty percent of the cells have expected frequencies of less than 5. Therefore, chi square may not be a valid test.

Research Question Four

What is the relation of negative beliefs regarding family planning methods to the implementation of planning methods?

Women's negative beliefs were elicited by asking them about the four most promoted family planning methods in Latin America: the contraceptive pill, tubal ligation, IUD, and injection. The questionnaire items related to Question 4 were as follows:

Have you heard anyone say anything bad about the ____?

What bad things have you heard?

Five hundred and ninety-nine negative beliefs or rumors were reported for the four contraceptive methods. Each interviewee reported from zero to eight negative beliefs per family planning method, and as can be seen in Table 19, the proportion of negative beliefs reflects the proportion of users for the four methods. Family planning adopters reported significantly more negative rumors than resistors. (Table 20).

Research Question Five

How are the belief that a family planning method is ineffective, and perceived degree of ineffectiveness related to implementation of the method?

To assess the relation of belief in the effectiveness of the contraceptive method to implementation of the method,

Table 17

Chi Square Test of Family Planning Conflict with Religious Beliefs by Family Planning Adopters and Resistors

Item 154: Is family planning very much against, somewhat against, or not against your religious beliefs?

		Resistors	Adopters	Total
Very against	Count	5	10	15
	Tot pct	5.6	11.1	16.7
	Row pct	33.3	66.7	
	Col pct	15.6	17.2	
Somewhat against		10	19	29
		11.1	21.1	32.2
		34.5	65.5	
		31.3	32.8	
Not against		17	29	46
		18.9	32.2	51.1
		37.0	63.0	
		53.1	50.0	
Total		32	58	90
		35.6	64.4	100

Chi square = 0.082 d.f. = 1 sig. = .775

Table 18

Chi Square Test of Perceptions of Family Planning as Good, Mixed Good and Bad, or Bad by Adopters and Resistors

		Resistors	Adopters	Total
Family planning is good	Count	16	35	51
	Tot pct	17.4	38.0	55.4
	Row pct	31.4	68.6	
	Col pct	49.5	59.3	
Family planning is a mix of good and bad		15	19	34
		16.3	20.7	37
		44.1	55.9	
		45.5	32.2	
Family planning is bad or don't know		2	5	7
		2.1	5.4	7.67
		28.6	71.4	
		6.1	8.5	

Chi square = 0.008 d.f. = 1 sig. = .927

Table 19

Negative Beliefs Regarding the Pill, IUD, Tubal Ligation, and Injection and Proportion of Subjects Using These Methods

Method	Number of Negative Beliefs	Mean Number of Beliefs	Percent Who Used the Method
Pill	290	3.15	53
IUD	149	1.62	12
Tubal ligation	106	1.15	3
Injection	54	0.59	2

Table 20

t-Test of Number of Negative Beliefs Held by Family Planning Adopters and Resistors

	Mean Number of Beliefs	Standard Deviation	Standard Error
Resistors	5.24	2.74	0.477
Adopters	7.22	3.12	1.407

t = 3.042 d.f. = 90 sig. = .003

interviewees were asked to rate the contraceptive pill in terms of its perceived effectiveness (Item 161). A Likert scale was used that ranged from 1 for very effective to 4 for very ineffective. The moderately effective and the somewhat effective categories were combined to eliminate expected cell frequencies of fewer than five. The "don't know" category was eliminated for the same reason. Table 21 shows that there was no significant difference in contraceptive use by belief in effectiveness. This finding may be related to the fact that some young mothers felt the pill was effective but had not yet had a need to use a birth control method and were therefore "resistors."

Even though chi square may not be valid because of cells with expected frequencies of fewer than five, it is apparent that there is some relationship between current implementation of the contraceptive pill and belief in its effectiveness. Ninety percent of current users believed it was an effective contraceptive; none of the current users felt it was ineffective (Table 21).

Belief in the effectiveness of the pill was also examined in relation to future intention to use the pill. Again, the "don't know" category was eliminated to avoid cells with expected frequencies of fewer than five. Table 22 suggests that there was a significant difference in future intention to use the pill by belief in its effectiveness.

Research Question Six

How are beliefs that a family planning method is a threat to health and perceived degree of threat related to implementation of the contraceptive method?

Item 162 of the questionnaire asked interviewees to rate the known contraceptive methods in terms of the perceived harmful effects to health associated with the methods. Interviewees' ratings with regard to only the pill were used in the analysis because there were too few users of other methods for statistical testing.

There was no significant difference between pill adopters, discontinuers, and current users by belief in potential harm (Table 23). There was also no significant difference in future intention to use the pill by its

Table 21

Chi Square Test of Belief in Pill Effectiveness by Past and Current Use

		Never used	Discontinued using	Currently using	Total
Very effective	Count	22	28	9	59
	Tot pct	25.9	33.0	10.6	69.4
	Row pct	37.3	47.5	15.3	
	Col pct	62.9	70.0	90.0	
Moderately effective and somewhat ineffective		9	8	1	18
		10.6	9.4	1.2	21.2
		50.0	44.4	5.6	
		25.7	20.0	10.0	
Very ineffective		4	4	0	8
		4.7	4.7	0	9.4
		50.0	50.0	0	
		11.4	10.0	0	
Total		35	40	10	85
		41.2	74.1	11.8	100

Chi square = 2.207 d.f. = 1 sig. = .137

Note. Forty-four percent of the cells have expected counts less than 5. Chi square may not be a valid test.

Table 22

Chi Square Test of Belief in Pill Effectiveness by Future Intention to Use

		Would use	Would not use	Total
Very effective	Count	42	16	58
	Tot pct	50.6	19.3	70
	Row pct	71.2	27.1	
	Col pct	75.0	61.5	
Somewhat effective and moderately ineffective		13	5	18
		15.7	6.0	21.7
		72.2	27.8	
		23.2	19.2	
Very ineffective		1	1	6
		1.2	6.0	7.2
		16.7	83.3	
		1.8	19.2	
Total		56	26	83
		67.5	31.3	100

Chi square = 4.349* d.f. = 1 sig. = .037

Note. Thirty-three percent of the cells have expected frequencies of less than 5. Therefore, chi square may not be a valid test.

Table 23

Chi Square Test of Belief in the Pill's Potential Harm to Health by Past Users, Discontinuers, and Current Users

		Never used	Discontinued using	Currently using	Total
No threat	Count	3	4	1	8
	Tot pct	3.5	4.7	1.2	9.3
	Row pct	37.5	50.0	12.5	
	Col pct	8.6	9.8	10.0	
Somewhat harmful		12	16	5	33
		14.0	18.6	5.8	38.4
		36.4	48.5	15.2	
		34.3	39.0	50.0	
Very harmful		20	21	4	45
		23.3	24.4	4.7	52.3
		44.4	46.7	8.9	
		57.1	51.2	40.0	
Total number					86
					100

Chi square = 0.639 d.f. = 1 sig. = .424

Note. Forty-four percent of the cells have expected counts of less than 5. Therefore, chi square may not be a valid test.

perceived potential threat to health (Table 24). These findings may be related to the fact that many women perceived that the contraceptive pill harmful to their health but were not aware of or had not considered another birth control alternative.

Research Question Seven

Is there a difference between family planning adopters and resistors by social-psychological characteristics?

a) communication with spouse

b) religiosity

c) aspirations for children

d) fatalistic outlook

There was no statistical difference between adopters and resistors with regard to religiosity, aspirations for children, and fatalistic outlook. But significantly more adopters had communicated with spouse regarding family planning than nonadopters. Data on socio-psychological characteristics were obtained from the following interview questions:

Have you spoken with your spouse/partner regarding the use of some method of family planning?

How often would you say that you attend church?

What level of schooling would you like for your children to complete?

Table 24

Chi Square Test of Belief in the Pill's Potential Harm by Future Intention to Use

		Would use	Would not use	Total
No threat	Count	6	2	8
	Tot pct	7.4	2.5	9.8
	Row pct	75.0	25.0	
	Col pct	10.7	8.0	
Somewhat harmful		24	6	30
		29.6	7.4	37.0
		80.0	20.0	
		42.9	24.0	
Very harmful		26	17	43
		32.1	21.0	53.0
		60.5	39.5	
		46.4	68.0	
Total				81
				100

Chi square = 2.273 d.f. = 1 sig. = .132

Note. Seventeen percent of the cells have expected frequencies of less than 5. Therefore, chi square may not be a valid test.

Would you agree or disagree that when a person is born, his destiny is already determined and this should be accepted?

Tables 25, 26, 27, and 28 show how interviewees reacted to these questions. Some response categories on educational aspirations for children were eliminated because they yielded expected cell frequencies of fewer than five.

Table 25

Chi Square Test of Communication with Spouse by Family Planning Adopters and Resistors

Communicated with Spouse		Adopters	Resistors	Total
Yes	Frequency	21	50	71
	Tot pct	22.8	54.4	
	Row pct	29.6	70.4	
	Col pct	63.6	84.8	77.2
No		12	9	21
		12.0	9.8	
		57.1	42.9	
		36.4	15.3	
		33	59	92
		35.9	64.1	100

Chi square = 5.295 d.f. = 1 sig. = .021

Table 26

Chi Square Test of Religiosity by Family Planning Adopters and Resistors

		Resistors	Adopters	Total
Attend church weekly	Count	17	35	52
	Tot pct	18.5	38.0	56.5
	Row pct	32.7	67.3	
	Col pct	51.5	59.3	
Attend church monthly		3	10	13
		3.3	10.9	14.1
		23.0	76.9	
		9.0	17.0	
Attend church once a year or less		13	14	27
		14.1	15.2	29.4
		48.2	51.9	
		39.4	23.7	
		33	59	92
		35.9	64.1	100

Chi square = 1.469 d.f. = 1 sig. = .225

Table 27

Chi Square Test of Educational Aspirations for Children by Adopters and by Resistors

Level Desired		Resistors	Adopters	Total
Primary 4-6 years	Count	7	9	16
	Tot pct	8.14	10.5	
	Row pct	43.8	56.3	
	Col pct	22.6	16.4	18.6
		31	55	86
		36.0	64.0	100
Secondary 4-6 years		8	13	21
		9.3	15.1	
		38.1	61.9	
		25.8	23.6	24.4
		31	55	86
		36.0	64.0	100
Low level professional		7	14	21
		8.1	16.3	
		33.3	66.7	
		22.6	25.5	24.2
		31	55	86
		36	64	100
University		9	19	28
		10.5	22.0	
		32.1	67.9	
		29.0	34.6	32.6
		31	55	86
		36	64	100

Chi square = 0.674 d.f. = 1 sig. = .412

Table 28

Chi Square Test of Fatalistic Outlook by Family Planning Adopters and Resistors

Item 124. When a person is born, his destiny is already determined and therefore should be accepted.

		Resistors	Adopters	Total
Agree	Frequency	25	41	66
	Tot pct	28.7	47.1	
	Row pct	37.9	62.1	
	Col pct	80.7	73.2	75.9
		31	56	87
		35.6	64.4	100
Disagree		6	15	21
		6.9	17.2	
		28.6	71.4	
		19.4	26.8	24.1
		31	56	87
		35.6	64.4	100

Chi square = 0.595 d.f. = 1 sig. = .441.

Research Question Eight

Is there a difference between adopters of family planning methods and resistors by socio-demographic characteristics?

a) years of schooling

b) type of sexual union

c) number of pregnancies, child deaths, and living children

d) religious preference

No difference was found between family planning adopters and resistors for any of these variables except type of sexual union when all age groups were included. This may be the result of the large proportion of young interviewees who had just experienced their first childbirth. When the 16- to 29-year age category was eliminated differences between adopters and resistors were statistically significant for all the variables except religious preference. Resistors had significantly fewer years of schooling (Table 30) and were significantly less likely to be married (Table 29). Resistors also had significantly more pregnancies (Table 32), significantly more living children (Table 34), and significantly more deceased children (Table 33).

A Spearman correlation analysis suggests an inverse correlation between mothers' years of schooling and number of pregnancies and an inverse correlation between mothers' years of schooling and number of children deceased. Number of deceased children correlated positively with number of pregnancies (Table 35).

Table 29

Chi Square Test of Family Planning Adoption by Type of Sexual Union

		Resistors	Adopters	Total
Married	Count	5	25	30
	Tot pct	5.4	27.2	32.6
	Row pct	16.7	83.3	
	Col pct	15.2	42.4	
Consensual union		16	25	41
		17.4	27.2	44.6
		39.0	61.0	
		48.5	42.4	
Not in union		12	9	21
		13.0	9.8	22.8
		57.1	42.9	
		36.4	15.3	
		33	59	92
		35.9	64.1	100

Chi square = 8.976 d.f. = 1 sig. = .003

Table 30

t-Test of Family Planning Adoption by Years of Schooling

	Mean Years Schooling	Standard Deviation	Standard Error	t	DF	Sig.
Adopters All Ages	3.34	1.28	0.17			
Resistors All Ages	3.12	.93	0.16	-0.94	84	0.35
Adopters Age 30-49	3.21	1.23	0.28			
Resistors Age 30-49	2.14	0.38	0.14	-3.38	23.7	.003

Table 31

Chi Square Test of Family Planning Use by Religious Preference

		Adopters	Resistors	Total
Catholic	Count	14	31	45
	Tot pct	15.2	33.7	48.1
	Row pct	31.1	68.9	
	Col pct	42.4	52.5	
Non-Catholic		16	20	36
		17.4	21.7	39.1
		44.4	55.6	
		48.5	33.9	
No Preference		3	8	11
		3.2	8.7	12
		27.3	72.7	
		9.1	13.6	

Chi square = 0.003 d.f. = 1 sig. = .955

Note. Seventeen percent of the cells have expected frequencies of less than five; therefore, chi square may not be a valid test.

Table 32

t-Test of Pregnancies by Family Planning Adopters and Family Planning Resistors

	Mean Pregnancies	Standard Deviation	Standard Error	t	DF	Sig.
Adopters All Ages	3.66	2.39	0.31			
Resistors All Ages	3.73	3.89	0.68	0.09	45.8	.93
Adopters Age 30-49	5.42	2.78	0.64			
Resistors Age 30-49	10.14	3.13	1.18	3.72	24	.001

Table 33

t-Test: Number of Children Deceased by Family Planning Adopters and Resistors

	Mean	Standard Deviation	Standard Error	t	DF	Sig.
Adopters All Ages	0.46	1.04	0.14			
Resistors All Ages	0.82	1.40	0.24	1.29	52	.202
Adopters Age 30-49	0.74	1.45	0.33			
Resistors Age 30-49	3.00	1.15	0.44	3.71	24	.001

Table 34

t-Test: Number of Living Children by Family Planning Adopters and by Resistors

	Mean	Standard Deviation	Standard Error	t	DF	Sig.
Adopters All Ages	3.20	1.86	0.24			
Resistors All Ages	2.91	2.65	0.46	-0.56	50	.57
Adopters Age 30-49	4.68	1.86	0.43			
Resistors Age 30-49	7.14	2.27	0.86	2.82	24	.009

Table 35

Spearman Correlation of Mothers' Schooling by Number of Pregnancies and Number of Deceased Children for the Sample Population Aged 30 to 49 Years

	Deaths	Schooling	Pregnancy
Deaths	1.000	-0.634	0.791
Schooling	-0.634	1.000	-0.684
Pregnancy	0.791	-0.684	1.000

Chapter IV described the statistically significant differences between a sample of indigent Honduran mothers who had never used a family planning method and those who had used methods. The dependent variable in this study was adoption or trial of family planning methods. The independent variables, derived from Rogers' model of diffusion of innovations, were knowledge of family planning methods, attitudes toward family planning, negative beliefs about family planning, social-psychological variables, and socio-demographic variables. Chi square, correlations, t-tests, and analysis of variance were employed to analyze the quantitative data.

Chapter V contains a summary of the most important results of the quantitative data analysis and the results of the qualitative data analysis. The implications for the content of family planning education emerge from both the quantitative and the qualitative data.

CHAPTER V
ANALYSIS OF QUALITATIVE DATA AND DISCUSSION OF THE QUANTITATIVE RESULTS

Chapter V contains a discussion of quantitative data related to Rogers' model of diffusion of innovations and the innovation adoption process. The explanation that follows contains an emphasis on quantitative results that are particularly relevant to educational programs. The qualitative data presented in this chapter may provide at least a partial explanation for the quantitative results, and is relevant to the content of family planning education.

Social Psychological and Socio-demographic Characteristics of the Sample

The sample population consisted of 92 indigent Honduran mothers of whom 72% were under 30 years of age. Fifty-eight percent of the sample population stated they did not want to have any more children. More than 96% agreed that family planning should be used to space offspring and to limit family size. The same percentage agreed that couples with good jobs and good incomes (those of higher status) practiced family planning. Even more important, 87% to 100% stated that relevant others--husbands/partners, mothers, closest sisters, and closest friends--were perceived as approving of family planning. Even though 97% of the sample population agreed it was a good idea to practice family planning to space children, only 64% had ever attempted to adopt a family planning method. In addition, a high proportion of past users of the most popular contraceptive methods, the pill and IUD, (43% and 88% respectively) stated they would not use those methods again--a point considered in the sections that follow.

Resistors of family planning were not different from adopters in attitude toward the idea of family planning, in number of family planning messages recalled, or in number of sources from which messages were received. Adopters and resistors did not differ on perceived approval of others, by religious preference, religiosity, or by their assessment of family planning as "good" or "bad."

Resistors of family planning were different, however, in that they had fewer years of schooling, had experienced more pregnancies, had had more child deaths, and had a larger number of children. Nonadopters were less likely to be married and less likely to have communicated with spouse/ partner regarding family planning methods. Contrary to expectations, it was the family planning adopters, not the resistors, who volunteered the largest number of negative beliefs regarding contraceptive methods.

In view of the generally very positive attitude that women had toward the idea of family planning, how does one explain that more than a third of the sample had never attempted to adopt a family planning method? Some of the resistors were very young women who had just had their first child, and some desired more children. Excluding these, most women (80% of the women over 29 years of age) did not want more children.

In terms of Rogers' (1983) model of diffusion of innovations, those who had never used family planning methods might be considered to be between the persuasion stage and the implementation stage of the adoption process. Based on their very positive attitude toward family planning, one could say that the resistors had been persuaded that family planning as a concept was desirable but had not yet entered the implementation stage of adoption which involves a behavior change.

Fishbein (1967) defined attitudes as a predisposition to act in some way. Allport (1967) presented an expanded description of attitude: "[It is] a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (p. 8). Allport explained that attitude is incipient, not overt, since it is not a behavior. It is readiness from latent to actual tension which is actually determining a course of conduct that is under way. Attitudes are distinguished by their double polarity--they characteristically provoke behavior that is acquisitive or aversive, affirmative or negative toward the object or class of objects with which they are related. Rokeach (1973) wrote that attitudes refer to an organization of several beliefs around a specific object, whereas values refer to a single belief of a very specific kind. Another explanation for the wide gap between attitude and contraceptive behavior could be a methodological one offered by Werner (1977). He wrote that a person might approve of family planning for most people but be opposed to practicing it oneself. To the extent that attitude affects behavior, Werner wrote that it is attitude regarding one's own practice of family planning that would most strongly relate to one's actual practices. The interviewees' position toward their own practice of family planning was not as positive as their attitude toward the idea of family planning in general. This "KAP" (knowledge, attitude, and practice) gap is addressed more fully in the discussion of women's beliefs regarding family planning methods.

Eighteen percent of the study participants had had three years of schooling or less. As predicted by the Rogers diffusion model, resistors of family planning had statistically significant less schooling than did adopters. This finding is not surprising, as formal education has been shown to be a major factor related to lowered fertility (Cutright, 1984). Fawcett and Bornstein (1973) wrote that education, as preparation for modern life, does not have a direct effect on fertility but, rather, works by changing attitudes, values, and behaviors which produce an overall trend toward lower fertility. In the study sample adopters of family planning had an average of 3.33 years of schooling and resistors had had an average of 3.12 years in spite of their younger age. Resistors who were over 29 years had 2.14 years of schooling.

The largest proportion of women in the sample (45%) were in consensual unions as opposed to marriage or visiting unions.* These are common in Central America, so much so that the term "illegitimate" is no longer officially used in Honduras to refer to children born out of wedlock (over 69% of all births, Ministerio de Economia, 1983).

Resistors of family planning were less likely than adopters to have discussed family planning with spouse/ partner. This may be related to the fact that resistors were likely to be in less stable unions than were adopters. Newman (1976), writing of Hispanics in California, stated that couples who are in a stable relationship have worked out a standard form of contraception. Lack of contraceptive preparedness for couples in casual relationships was keyed to maintenance of an ideal of purity outside marriage while carrying out the role of the sexually active woman. The women Newman interviewed were supported by their partner in both roles. Stycos (1962), who studied family planning in Puerto Rico, stated that lack of communication between partners led to their making incorrect assumptions about each other, according to cultural stereotypes. A woman assumed her partner wanted more children and a man assumed his partner was too modest to consider contraception.

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*A number of reasons have been offered for the predominance of consensual unions such as lack of inheritance property, and inaccessibility of priests to marry rural couples. Viel (1976) explained that Latin American pronatalism exists because the Spaniards, who were not farmers, depended heavily on the decimated Indian population for labor. Therefore, it was in the Spaniards' interest to maximize fertility. While the Church in Europe was promoting responsible parenthood, the Church accepted extramarital sex in Latin America as mere peccadillos. Goode (1961) observed that two classes emerged from the Iberian conquest: the Creoles who were the legitimate offspring of Iberian marriages and the Mestizos who were the offspring of illegitimate unions between Spaniards and Indians.

Family planning resistors over 29 years of age had had almost twice as many pregnancies as adopters, had experienced more than four times as many child deaths, and had two-and-a-half times as many surviving children (Table 32, 33, 34).

The adopters of family planning and the resistors did not differ by fatalistic outlook or aspirations for children. Contrary to some studies in other developing countries, the sample population did not view children as an economic asset. Ninety-three percent of the sample stated that children were an economic burden.

One noteworthy observation was that the study participants had very high educational aspirations for their children. Twenty-nine percent of the family planning resistors and 35% of the adopters aspired to a university education for their children (Table 27). Seventy-seven percent wished their children to complete at least secondary education (comparable to U.S. grades 7 to 12). High educational aspirations for children has been found to be a major incentive motivating small family size in other developing countries (J. C. Caldwell, Reddy, & P. Caldwell, 1985). Secondary education is not free for Honduran children, and a number of study participants expressed concern for how they could afford to educate their children.

The existing family size and the desired family size for this study sample showed a consistent downward trend by younger age groups. Hermanlin (1983), referring to the number of children that is desired or felt to be ideal, stated, "This number may be compared with the actual or ideal number of living children or another indicator of supply. If the actual number of living children equals or exceeds the desired number, motivation to control fertility may be presumed" (p. 10). On average, the study participants over 29 years of age had had more children than they thought were desirable. By Hermalin's formulation, this situation would represent an "excess supply" of children, and therefore women should be motivated to use family planning methods.

In spite of the fact that ideal family size was getting smaller, the sample women over 29 had .50 more surviving children than was true of a representative sample in 1984 (Ministry of Health). That this study indicated more surviving children may mean that a) by virtue of residence in an urban area, the study sample had better access to health care; b) the study sample had more years of schooling--a factor that previous studies have shown to be a significant correlate to infant survival; and c) over the past approximately 15 years there has been a 40-50% decline in the infant mortality rate for the country due to improved public health measures such as vaccinations, sanitation, and possibly also oral rehydration therapy. While more children are surviving, the trend is toward wanting smaller families. Even though interviewees have been said to adjust their stated preferred family size upward or closer to the existing family size, on average, the study participants over 29 years of age had had more children than they considered desirable. The completed family size for women over 39 years represented an average of 1.56 children more than they had wanted. This situation represents an unmet need for family planning. Yet, by no means were unwanted or unplanned births due entirely to family planning resistors. Traditionally, indigent Honduran mothers breast feed their infants, and the lactation period is relatively long--over 16 months (Janowitz, Bailey, Ochoa, & Suazo, 1987).* While this practice has been hailed by some as a natural method of birth control, the ineffectiveness of lactation for birth control purposes has been well documented (Hatcher et al., 1988).

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*Contrary to some other cultures, the Hispanic culture does not have prohibitions against sexual activity for lactating women. Also, frequency of suckling may be less and supplemental feedings may be used more than in those cultures where breast feeding has resulted in long spacing between offspring.

Lactation is a particularly high risk time for unwanted pregnancy in Honduras.

Several interviewees had become pregnant or knew women who had become pregnant during lactation. Twenty-two percent of the interviewees stated that lactation offered sure protection against another pregnancy; 66% were aware that it did not. Twenty percent of the interviewees stated that supplemental infant feedings had no effect on increasing their risk of pregnancy; 63% were aware that supplemental feedings increased risk. A number of women who were interviewed during the postpartem period were anxious to have a tubal ligation, but arrangements for this procedure involved long delays and, in addition, some women were not eligible for tubal ligation. The following statements were made by a 19-year-old postpartem patient who had just delivered her third child:

> My brothers say that I should have the operation [tubal ligation] but the hospital will not perform it unless a woman is over 25 years old and has three or more children. My husband agrees [with the idea of tubal ligation]. He does not want any more children because of the economic situation. We are poor. Family planning is good because it helps avoid [more] children, but it is not easy to know how to carry it out.

Some low-dose contraceptive pills have been found not to interfere with lactation and are considered safe to take during this period (Hatcher et al., 1988). However, these are generally not known or are not available in the La Ceiba area. A method that is generally thought to be an ideal contraceptive for lactating women is the IUD, but immediate postpartem insertion of IUDs is not a common practice in Honduras, and in any case, interviewees reported an unusual number of serious problems with this method. Thus, having eliminated the three most effective contraceptive methods, and the best known for the area--the pill, IUD, and tubal ligation--the women interviewed were at a loss as to how they would prevent an unwanted pregnancy during the lactation period.

Given the circumstances, it appears that only the less reliable family planning methods are available to nursing indigent women. Clearly, family planning educators must address the high risk of unwanted pregnancy during lactation and the problem of effective birth control during that time. Women need to be informed of what methods, or combinations of the less effective methods, can be used.

Child Spacing Preferences

In addition to desiring a smaller family size, the ideal spacing stated by the interviewees was another indication of motivation to use family planning. Item 119 of the questionnaire asked, "In your opinion, what is the ideal interval to have between children?" The majority of women felt that 3 years was the ideal spacing. Thirty-one women stated 3 years of spacing was ideal and another 31 interviewees had spacing preferences of 3 years or more.

Spacing preferences and frequency of responses are summarized in Table 36.

Table 36

Spacing Preferences by Frequency of Response

Preferred Spacing years	Frequency
2	19
2-3	8
2-5	1
3	31
3-4	6
4	6
3-5	1
4-5	2
5	11
6	3
6-7	1
8	1
no response	2
Total	92

After the ideal spacing was stated, interviewees were asked why they had responded as they did. Most of the perceived desireable effects of spacing related to maternal and child health. The study participants' perceived advantages of child spacing appear in Table 37.

Table 37

Stated Advantages of Spacing Children and Frequency of Responses

Mother's health	30
Children get better attention or better care	23
Children are healthier or better fed	19
Economic reasons: cost of milk or food	14
It is less time demanding on the mother	7
A mother can't carry two children	6
Total number of responses	99

The interviewees also demonstrated that they were aware of the negative consequences of high parity on a woman's health. Eighty-four percent of the sample made 87 statements of negative effects in response to item 119: "How are lots of pregnancies harmful to a woman's health?" These responses are summarized in Table 38.

The high infant mortality experienced by resistors of family planning, the connection between close spacing of births, and multiple pregnancies to poor health outcomes for children (and mothers) cannot be stressed enough by educators.

Table 38

Stated Undesirable Effects of Having Repeated Pregnancies and Frequency of Responses

Responses	Frequency
Women become weak, sick, wasted, tired, fatigued	30
The uterus becomes weak or diseased	10
There is blood loss or anemia	9
Pregnancies make a woman old	8
Nonspecific poor effects	7
Pregnancies are bad for the veins	5
Death to the mother from complications	4
Children are born sickly or malnourished	4
The pregnancies become more complicated	4
Additional pregnancies cause blood pressure increase	3
Total number of statements	87

Perceived Consequences of Pregnancy for Older Women

The sample population also demonstrated awareness of the deleterious effects that pregnancy and childbirth can have for older mothers. Item 122 asked, "Is there an age after which pregnancies can be problematic?" This was followed with, "What could happen if a woman has children after (the stated age) years of age?" Fifty-one percent of the interviewees stated that women of age 30 years or older

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should not sustain pregnancies. Eighty-five percent of the women interviewed volunteered negative health consequences of pregnancy for older women. These remarks are summarized in Table 39.

Table 39

Perceptions of Negative Health Consequences of Pregnancy for Older Women and Frequency of Responses

Consequences	Frequency
Complications of pregnancy such as anemia, miscarriage, hemorrhage, high blood pressure heart involvement, greater risk of need for surgical intervention and mother may already have medical problems	22
The mother does not have the strength to sustain a normal pregnancy and delivery	22
The infants are born in poor health, "malnourished" or become sickly	18
The mother can die	11
Total number of statements	73

Adopters and resistors of family planning did not differ by religious preference or by religiosity. While Latin America is still considered to be a Catholic region, the Protestant religions are enjoying increasing popularity. Only 49% of the study participants stated they were affiliated with the Catholic Church, and there was no difference between family planning adopters and resistors on the basis of religious affiliation. Stycos (1968) opined that for the lower classes of Latin America, Catholicism is a series of rituals that are combined with social festivals and a cult of saints to bring good fortune. Even though people are aware of the attitude of the Church toward family planning, many tend to disregard it. In the investigator's experience, disregarding the Church in this matter is perhaps even more true of the middle classes.

The Protestant churches are not known to denounce family planning. On the contrary, some interviewees reported that their churches encouraged it, and persuading her patients to use family planning methods was one of the primary concerns of a physician missionary with whom the investigator had several conversations during the data collection. Yet, a large proportion of the non-Catholic interviewees indicated that family planning presented a conflict with their religious values. Interviewees were asked, "Would it be against your religious beliefs to practice family planning?" This question was followed with "Do you think that family planning is good, a mix of good and bad, or all bad?" and "Why do you feel that it is _______?" Table 40 illustrates the breakdown of conflict with religious values by religious association.

Table 40

Degree of Conflict with Religious Values by Religious Association

	No Conflict	Moderate Conflict	High Conflict	Don't Know	Total
Catholic					
Frequency	19	16	8	3	46
Row pct	45	34	17	7	103
Protestant					
Frequency	20	9	4	1	34
Row pct	58	26	12	3	99
No Preference					
Frequency	6	6	0	0	12
Row pct	50	50	0		100
Total					
Frequency	45	31	12	4	92
Pct	49	34	13	4	100

As illustrated in Table 40 a large proportion of the sample population (47%) had at least a moderate religious conflict with family planning. Fifty-one percent of the Catholic interviewees and 41% of the non-Catholics stated that they had a moral conflict with family planning.

The conflict between traditional values and modern pressures was poignantly expressed by an interviewee who had heard that oral contraceptives cause cancer:

> I have heard that the pill causes cancer. This might be true because the natural thing is for one to have all the children God sends. So it might be true that family planning causes cancer. But one is poor; one cannot manage with so many children.

The implication appears to be that God will punish, by causing illness, those who do not accept all the children He sends.

Many women who had used contraceptive methods seemed to feel a need to justify doing so. Most stated that the present economic conditions made family size limitation necessary. For example,

> One would want to have all God sends. Raising them is sad. My son was sickly and I had a hard time caring for him and the baby, so I had to start family planning. One's child can die because one can't buy the medicine needed.

Values have been defined as enduring beliefs that a specific mode of conduct or end state of existence is personally or socially preferable to an opposite or converse mode of conduct or end state of existence. When values are activated, the behavioral outcome will be the result of the relative importance of all the competing values that the situation has activated (Rokeach, 1973).

Activating new values to compete with obsolete ones is one of the central roles of education. The moral conflict that family planning presents to the less advantaged is a matter that is rarely addressed by family planning educators. Plainly, it should be a top priority.

While the "up to God" response for how many children were wanted was low (5%) family planning education should also attempt to dispel the belief that women should have all the children God sends. Fifty-three percent of the interviewees felt family planning was good; 39% felt it was a mix of good and bad, and 5% felt it was all bad. Two interviewees stated they did not know whether family planning was good or bad. Notably, 51% of the women who indicated a religious conflict with family planning evaluated it as good. Also 64% of those who evaluated family planning as bad or mixed good and bad cited health reasons for their negative evaluation. The following are comments of the interviewees who stated that family planning was all bad:

> It is bad because it might be a sin.
>
> They say it is bad because each pill that one takes represents a child being killed.
>
> It is bad. They say family planning causes cancer, and besides at first one feels real ill.
>
> It destroys a woman's whole body.
>
> I have a sister-in-law who is not doing well with family planning. It raises her blood pressure.

One interviewee who was not sure of how to evaluate family planning made the following statement:

> I don't know if family planning is good or bad or a mix. Some people say it isn't harmful but I don't know. It might be that the methods are bad. Maybe it's better to have a tubal ligation.

It should be noted that for many women the term "family planning" is synonymous with the contraceptive pill. This may be because for many, the contraceptive pill is the only method of birth control that they are aware of. Also, many women stated that the good aspect of family planning was that "it spares one from having children." While this might be interpreted as meaning that family planning spares women from having _any_ children, a more correct interpretation would be that it spares women from having _more_ children. Deliberate childlessness is virtually unknown in Central America.

Knowledge and Use of Family Planning Methods

One hundred percent of the study participants were aware of the anovulatory pill as a family planning method. Thirty-six percent had never used any method, and 64% had used at least one method.

Fifty percent of the sample had used the contraceptive pill, and of these 43% stated they would either definitely not or would probably not use the pill again. Eleven percent of the sample had been IUD users and of these, 88% stated that they would not use the IUD again. Learning why women discontinue using methods is as important for family planning education as learning why, in the face of wanting no more children, they resist using contraceptive methods. Novak (1983) quoted studies that identified contraceptive discontinuers as women who were ambivalent about birth control and less committed to averting future pregnancies.

Discontinuers are a very important group not only because of the size of the group but because discontinuers most likely constitute a rich source of negative rumors. To elucidate why women had discontinued using methods, the interviewer asked, "Which was the last family planning method that you used and discontinued?" and " Why did you discontinue using that method?"

Forty-seven interviewees mentioned a last method discontinued and why. Seventeen (36%) gave accidental pregnancy as a reason. Nine of these were pill pregnancies, which may indicate a lack of "how-to" knowledge. Six of the other contraceptive failures were related to use of ineffective methods. These and other reasons for discontinuing appear in Table 41.

Table 41 refers only to the last family planning method discontinued and therefore does not represent all the contraceptive failures or all the method-related side effects reported by the sample population. A more complete account of negative experiences was offered when the interviewees were asked about their negative beliefs regarding contraceptive methods.

High contraceptive failure rates for the contraceptive pill corroborates the findings of Potter et al. (1988) and Laing (1974) from other developing countries. Failure rates of over 20% or more contrast with a 2.5% failure rate for married United States pill users (Grady, Hirsch, Keen, &

Table 41

Discontinuers of Family Planning Methods by Method and Reasons for Discontinuing

	Frequency	Percent
Pill discontinuers		
Accidentally became pregnant	9	31
Side effects	12	41
Negative rumors	3	10
To become pregnant	3	10
Miscellaneous	2	8
	29	100
IUD discontinuers		
To become pregnant	4	44
Accidentally became pregnant	2	22
Infection	1	11
Side effects	1	11
Husband did not like it	1	11
	9	99
Rhythm discontinuers		
Accidentally became pregnant	4	67
In order to become pregnant	2	33
	6	100
Suppository users		
Accidentally became pregnant	1	50
Felt method was ineffective	1	50
		100
Withdrawal user		
Accidentally became pregnant	1	100

Vaugham, 1983). This high failure rate may partially explain why 36% of the sample population agreed that taking measures to avoid pregnancy was too difficult.

The questionnaire used for this study did not contain items asking how contraceptive methods should be used, but some women volunteered that they ingested a contraceptive pill only if they expected to have sexual intercourse that day. Others who volunteered that occasionally they forgot to take their pill did not know what to do to gain continued protection in that event, and others ingested several pills on one day and none on other days.

The following statements indicate that some women felt a need for "how to" information with regard to the pill:

> They want to take the pills but don't know how to take them--how many to take in one day.
>
> Women need talks since we don't know anything. They need to know what to do to not have [more] children. We need to have it explained to us how to take [the pill]--should one take the white ones or the brown ones or both? Women don't know this and that's why they become pregnant.
>
> There are women who think that they know, but they don't know. They need to know not to take three or four pills at one time. [There is] need to know how to take the pill.

The matter of how to take the contraceptive pill was especially confusing to indigent Honduran women for several reasons. Since pills could be purchased at any pharmacy without a prescription, they were obtained without any health provider assistance or instructions. A myriad of pill brands were available--mostly manufactured in Western Europe. Interviewees stated that there were no instructions in the pill packets, or instructions may have been in languages other than Spanish or may have been oriented to medical personnel. This investigator counted 11 different brands of contraceptive pills available at one drug store. Adding to the confusion, some packets contained all white pills, other packets had pills of two colors and some had pills of three colors. The number of pills to be taken over a cycle also varied. Since the women's chief source of information on contraceptives and how to use them was other women, it was only reasonable that in the case of the pills there was considerable confusion.

Confusion also existed over the effectiveness of various family planning methods. Twenty-one percent of the study participants felt the contraceptive pill was only moderately effective or somewhat ineffective, and 9% felt the pill was a very ineffective birth control method. Indigent women did not have access to factual information on contraceptive failure rates and had observed many failures both in their own experience and in the experiences of other women:

> I have seen three women become pregnant taking the brown and white ones [pills].
>
> Some have become pregnant--they bought the cheapest pills.
>
> I became pregnant while using the pill--I have no faith in them.

In the world of indigent Honduran women, even highly effective methods such as the contraceptive pill and the IUD are associated with high failure rates.

Simmons (1986) wrote that the risk of contraception appeared to be higher for women in developing countries.

While 36% of contraceptive discontinuers for this study population had discontinued the last method used due to accidental pregnancy, 14 (30%) of discontinuers discontinued the last method due to its side effects (infection in an IUD user has been included in this count). Eighty percent of the interviewees agreed that some methods of family planning were more dangerous to women's health than pregnancy or childbirth. Thirty-eight percent felt that the contraceptive pill was somewhat harmful to health, and 52% felt that it was very harmful to health. Sixty-eight percent of the interviewees who stated they would not use the pill, felt that it was very harmful.

Family planning adopters had significantly more negative beliefs than resistors, and the number of negative beliefs increased as the number of users of a method increased. That contraceptive users had more negative beliefs corroborates the findings from a study of contraceptive negative beliefs in Egypt (Barcelona, 1983). One explanation could be that those who are interested in the innovation seek information about it at all stages of the adoption process and even after adoption. But in addition, the subject of contraceptives and their side effects would be more relevant to adopters. Also, by virtue of their own experiences with methods, adopters would have more to say about them. Thus when family planning adopters exchange birth control information with other

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planners, they are likely to receive as well as to give more information.

A rich recount of negative beliefs and experiences with contraceptive methods flowed from the questionnaire items that asked interviewees whether they had heard anything "bad" about the pill, IUD, tubal ligation, and injection. Some examples of what the interviewees said follow:

> I took the pill for four months and I tried . . . different brands. *Nordet* caused me to get thin because I vomited every morning; *Ovral* caused me to have abdominal pain and took away my appetite; *Normines* also caused me to vomit every morning.
>
> It [IUD] caused me to become all swollen. I urinated one day and it fell out and after that, my inflammation subsided.

In addition to having had close experiences with side effects, misperceptions about expected physiological changes brought about by the use of hormonal contraceptives added to their "bad reputation." Statements by the following three interviewees are an example:

> [Injections] cause the menstrual periods to be suspended. This [blood] is retained for six months and can cause problems with the uterus. When there is a period every month, the uterus is kept clean. When the uterus is not kept clean one gets infections. Also after no period for six months, when it comes, it comes in abundance.
>
> [The pills] disturb one's organism. One gets scant periods and this is bad. A lady physician [on T.V.] says that this causes clots in the uterus.
>
> [The pill] causes menstruation to come in an abnormal way.

Women's beliefs about the contraceptive pill, the IUD, tubal ligation, and hormonal injections are summarized in Tables 42, 43, 44, and 45. The most used contraceptive method was the contraceptive pill, and it was also the method about which there were the most negative beliefs. Twenty-eight women (30%) volunteered that they had heard that the pill caused cancer. Those who did not spontaneously mention this rumor were asked if they had heard it. Eighty women (87%) stated that they had. A belief mentioned by 7% of the study participants was that the contraceptive pills do not dissolve. Some believed that a consequence of "undissolved" pills was that they produced a mass or tumor which then led to cancer. Another common belief related to undissolved pills was that an infant would be born with a mass of pills "stuck to his head". These and other beliefs about the contraceptive pill and the proportion of the study sample who mentioned them follow in Table 42. Beliefs about the IUD are summarized in Table 43.

As in other parts of the developing world, in Honduras the IUD seems to be an especially problematic contraceptive method. Many of the problems with IUDs in developing countries have been blamed on inadequate medical follow-up. But in addition, the problems volunteered by respondents in this study point to the possibility of improper insertion techniques. This investigator feels that family planning educators should not promote the IUD as a contraceptive

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Table 42

Negative Beliefs About the Contraceptive Pill and Proportion of Interviewees Who Mentioned Them

Responses	Proportion
Causes cancer.	87%
Causes nausea and vomiting.	30%
Causes stains on the skin.	26%
Causes one to get thin.	18%
It is an unreliable contraceptive.	15%
Causes one to gain weight.	14%
Causes dizziness.	14%
Causes abnormalities of the fetus.	8%
The pills do not dissolve.	7%
Causes high blood pressure.	4%
Causes death of the pill taker.	3%

Note. The proportions exceed 100% because many participants mentioned more than one negative belief.

method until studies show that it is a relatively safe and effective contraceptive for the geographic area. Many of the women's comments summarized in Table 42 stemmed from personal experiences, their own, or those of women whom they knew.

As with the IUD, some of the interviewees' comments about the negative consequences of having a tubal ligation point to the possibility of improper medical procedure. Again, the family planning educator would need the backing of studies that show that tubal ligation is a safe and effective method of birth control for the geographic area. Table 44 summarizes women's negative beliefs about tubal ligation.

Table 43

Negative Beliefs About the Intrauterine Device and Proportion of the Interviewees Holding Those Beliefs

It is not a reliable method.	32%
It causes infection.	29%
It perforates the uterus and becomes embedded or migrates away from where it should be.	28%
It causes heavy bleeding.	14%
It becomes embedded in the fetus.	12%
It causes cancer.	13%
It works by causing abortions.	5%
Miscellaneous.	26%

Of the four contraceptive methods about which negative rumors were solicited, the injections were the least known. Long-acting contraceptives such as injectable progestins were, and still are, considered by some to be the ideal contraceptive for developing countries because of their long-lasting effects. But statements made by the interviewees illustrated that the long-term effect itself was a deterrent to women's inclination to use injectables. For example, as stated by two interviewees,

Table 44

Negative Beliefs About Tubal Ligation and Proportion of the Interviewees Who Held Them

Response	Proportion
It is not a sure method. One can become pregnant.	22%
After the surgery, one has pains or is sickly.	16%
After the surgery, one develops a discharge/ infection.	13%
The surgery carries risk of death.	11%
The surgery causes one to get fat or thin.	11%
Objections to postoperative restrictions: special diet, abstinence from strenuous activity, and sexual abstinence.	5%
It causes cancer.	4%
Sometimes the surgery is not done correctly.	3%
Miscellaneous: It causes headaches, dizziness, nausea, decreased libido, menopause, convulsions, umbilical itching, one's hair falls out, one is not the same inside afterwards, fear incision.	14%

> The effect of injections lasts a long time and so if they disagree with one, one has to wait a long time to get over the ailment.
>
> It's risky, once one gets it, the bad effects can't be stopped.

Fifty-four negative statements were made about injectable contraceptives by interviewees. The most frequently mentioned negative aspect about injectables was that they cause menstrual periods to be suspended for 3 to 6 months, and this is believed to be "abnormal" and to cause harm. Two examples follow:

> Blood is retained when there are missed periods and this causes dizziness and headaches.
>
> I would not want to use this because sometimes one does not get a period for three months and that is bad.

Another example of lack of principles knowledge comes through from the following statement:

> This is a venomous liquid--it poisons the uterus. The uterus becomes weak when periods are due.
>
> The injection goes to the blood and harms it. It causes cancer.

These and other beliefs about the injections are summarized in Table 45.

These quotes and summaries of women's beliefs are clear examples of how lack of minimal principles knowledge and unawareness of what to expect from contraceptives lead to exaggerated fears of them.

The implication for educational programs is that women need to receive, in simple, understandable ways, information about how the reproductive system functions and how hormonal contraceptives bring about their effects. In this way innocuous side effects can be viewed from the perspective of their physiological action. An explanation of how the different contraceptive pills vary also appears to be needed. Women need to know that certain common symptoms usually subside after the first three months of taking oral

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Table 45

Negative Beliefs and Objections to the Contraceptive Injection and Proportion of Interviewees Believing Them

Responses	Proportion
They cause periods to be suspended.	9%
The injections harm health.	9%
It is an unreliable method.	5%
They cause heavy periods.	4%
Objections to long-lasting effects.	3%
They cause headaches.	3%
They are expensive.	3%
They raise the blood pressure.	2%
They cause infertility.	2%
Miscellaneous: Its a drug; they hurt; they have a bad effect on the intestines; poison the uterus; caused a mongoloid birth; cause abortions; cause the uterus to become weak when periods are due; they cause cancer, tumors, infarcts, death.	11%

contraceptives. But when symptoms persist, it is best to see a physician prior to buying a different brand of pill as symptoms are usually due to varying concentrations of hormones (estrogens and progestins). Before changing pills, women must know which of the substances is the likely cause of the symptoms and which brands of pills are lower in that hormone. Low-dose pills that cause fewer side effects for some women may result in accidental pregnancy for others.

Because of the amount of information women must have in order to properly self-prescribe the pill, it may be that independent "talks" should be held for women who have decided to use this method, or who are already using the contraceptive pill. The educational leader at these talks would have to be thoroughly familiar with all the brands of pills available and their respective concentrations of estrogen and progestin in order to answer discussion participants' questions and advise them on needed pill changes when necessary. Such talks should be made available at the same place and time at regular intervals.

The Public Media and Women's Reactions to Family Planning Messages

By far the majority of family planning messages received had been heard on television or radio and the great majority of messages were delivered by male narrators. Most of the family planning messages broadcasted had a commercial objective. Not surprisingly, most of the messages recalled were commercial ones. The study participants agreed most with public health and least with commercial messages and antimethod messages. Nineteen (21%) of the interviewees stated that they did not agree with or did not like an aspect of a message heard from the public media. Two women were not sure how they felt about at least one family planning message heard. Most disagreement with messages was related to conflicting information. The following three women's comments are examples:

> I disagree with messages urging women to use the pill because a physician stated on television that these are drugs.
>
> I disagree with the condom message because condoms are very dangerous--several people have died from using them.
>
> I disagree with messages urging women to use the IUD because I used it and had problems with it. Every time I sat down I could feel something like a needle or a wire puncturing me and I got a pelvic infection. My friend also used an IUD and it punctured her and she got cancer from that and died.

Only three messages were felt to be offensive:

> I don't like the _Normines_ ad because it uses a party setting and a male narrator.
>
> I don't like the _Nordet_ [pill] announcement because a woman should be used as the narrator.
>
> I don't like the condom messages--these shouldn't be used. They are offensive.

As with other questions, asking the respondents messages they disagreed with pointed to a preference for birth control messages that were family oriented:

> I don't like the _Perla_ [pill] announcement because it doesn't give any advice for the family. They are just announcing the availability of the pill.

Commercial messages may persuade women who have already decided to try family planning to purchase certain brands of pills. The public health and general family planning messages are more likely to be the ones that "sell" the idea of family planning and the desirability of small family size. But the Hispanic culture is a child-oriented one. Few women would consider the option of childlessness desirable, and sexual promiscuity on the part of women is severely frowned upon. Therefore, the desirability of family planning and the acceptability of contractive methods must be kept within the context of what is best for the family and the children. Several interviewees, in relating messages that they had heard, stated that they liked those that gave advice for the family.

While there was no statistically significant difference in agreement with messages by gender of narrator, there was more agreement with female narrated messages. Studies from other developing countries have found that in certain circumstances, women are more receptive to other women, particularly older ones. For instance, Mohseny (1981) found that female primary care workers age 35-45 were the best received by women patients, and Papanek (1979) reported similar findings related to the acceptance of family planning research interviewers.

Based on the remarks made by the interviewees, family planning messages should be delivered in the context of family welfare, and in general, narrators and educators of female family planning methods should be women. Older women who have raised children could be expected to have more experience and credibility than younger women. In addition, attempts should be made to lower the professional or "status" barrier that frequently exists in Latin American clinics between the health care providers, or family planning

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educators, and patients. This would serve to increase what Everett Rogers terms homophilly between the innovator/ educator and potential adopters. Along these same lines, in the United States many women's health care clinics of the 1970s espoused the philosophy of women's health care for women (equals) by women and were very successful.

Carvajal and Geithman (1976) have written that diffusion of modernizing ideas through mass media tends to undermine the role of traditionalism by making people aware of alternate lifestyles. The mass media also builds a demand for goods and services which are competitive with having children.

The desire for information on alternative contraceptive methods and how to use them came through clearly when women were asked Item 157, "Do you think there is a need for women to know more about family planning or do you think that they have all the information they need?"

Of the 92 women interviewed, two stated they did not know if family planning information was needed; one stated that no more information was needed, and there were no data for one subject. Eighty-eight women stated that women needed more family planning information, and most of them had definite ideas about what kind of information was wanted.

Thirty-six interviewees stated a need to know about alternative contraceptive methods. For example,

> At least I don't know anything about family planning. I would like to know the kinds of contraceptives that are good and [those] that are bad and if they are going to be well tolerated by me or not.

> They need to know how to use a method right--also [information] about more methods and what bad effects methods can have.

> [There is need for] more knowledge like what methods there are. I don't know much like what to use or how or if it is harmful.

Twenty interviewees wanted information on the harmful effects that methods might have. Two examples follow:

> They need to know the harm that the pill can cause. Also that taking the pills too much can cause cancer. They can be taken for only two years.

> I want to know if it is true that [family planning] is bad--what bad effects [the methods] have. I want to know if they [the pills] dissolve or not. If they do not dissolve, they accumulate in the uterus and that is how the cancer starts. I want to know if it would be good to family plan with another method.

Fifteen women stated that general family planning information was needed. The statements of three follow:

> If I had had [family planning] information, I would not have had so many children or I would have had them better spaced. Talks are needed in the clinics which give one an orientation [to available methods] that way one can use what one thinks is good.

> People who don't have any television or radio should be visited because they don't know about any method. Those people have children and can't support them.

> There is need to know more--some of us don't understand anything and we always keep having [children] and having [children]. There is need to explain clearly. Here in the urban area we know,but

> in the rural areas they don't know or they don't understand. They need more information.

Twelve women stated that information was needed on how to use methods. Two examples follow:

> [Women] need to know more about the pills and how to take them. I think that one should take them only when expecting to have sexual relations with the husband, not every day.
>
> For instance, information because I have never used family planning. I need to know how to take the pills--like when to take the brown ones.

Nine women stated that more information was needed regarding the side effects of using various methods. An example follows:

> [We need] information on the pills and why they cause nausea for some and not for others.

The educational implications of these statements are quite clear. In addition to the informational needs cited here, there is a need for principles knowledge particularly with regard to the contraceptive pill. Women need to understand that all pills dissolve and how they work. (That pills do not dissolve and cause tumors or cancer or become stuck to the fetus seemed to be a fairly widespread rumor.) They need to know what causes the side effects and that these same side effects occur in pregnancy for the reason that the contraceptive pills work by mimicking pregnancy.

This study sample represented a group of women, of whom the majority, by virtue of urban residence, were relatively better schooled, better informed, and generally less disadvantaged than might be found in a representative sample of the Honduran population. Women who were in La Ceiba to give birth from the outlying areas did not appear to be as advantaged as the La Ceiba residents. For example, one rural interviewee, a 42-year-old woman, had been in a consensual union for 27 years and had sustained 14 pregnancies. (Nine children were living; of the deceased, 4 had died in the neonatal period.) This interviewee stated that she would have liked to have had two or three children.

> We lived in the rural areas and I never got medicine to prevent [births]. The nurses never gave me pills or I would not have had so many.

A representative sample of the population might have captured more women such as this one and might have revealed additional informational needs to be considered by educational leaders in family planning.

The qualitative data presented in this chapter corroborates Leavell's (1955) contention that every innovation comes to confrontation with culture--" . . . that complex whole which includes knowledge, belief, art, morals, law, customs, and any other capabilities and habits acquired by man as a member of society" (Tylor, 1958, p. 1).

CHAPTER VI
IMPLICATIONS FOR EDUCATIONAL INSTRUCTION STRATEGIES

In order to understand why indigent Honduran mothers had not adopted family planning methods, one needed to examine their existing knowledge, beliefs, and attitudes toward family planning. Two components were involved: One was perceptions (a product of knowledge) and the other was a new idea/behavior (family planning) that when viewed as an "innovation" had its own unique characteristics. Rogers' model of diffusion of innovations was particularly salient to examining the problem of nonadoption of family planning methods: It framed the problem in terms of understanding the characteristics of persons who adopt new ideas reluctantly and also shed light on the characteristics of more difficult-to-adopt-innovations, of which family planning is one. Perception and attitude are key concepts for addressing both the nature of the reluctance to adopt family planning methods and a solution, which in free societies rests largely in the realm of education. Analysis of responses to the interview instrument revealed that many indigent women perceived most contraceptives as dangerous to their health and ineffective.

One half of the study population also had moral conflicts related to the use of family planning methods.

It is essential to close the knowledge gap and ease conflicts, not only for purposes of changing the attitudes of resistors and discontinuers of family planning methods, but also to ensure that current adopters of methods do not become discontinuers.

A theme consistent among cognitive theorists is that new concepts are learned according to how they relate to existing concepts, and ideas, once espoused, seek self-preservation. Similarly, and of relevance to family planning education, when new ideas are perceived, their reality is changed to make them compatible with existing cognitive structures. With each accommodation of this sort, successive ones are made easier. In addition to these briefly stated observations of cognitive theorists, two principles of persuasion theory are highly relevant to family planning education for groups of women similar to the study participants: (1) The degree of incongruity between the new message and preconceptions determines the extent to which the new message will be accepted and (2) information perceived as designed to change one's attitude is more likely to be discredited (Salomon, 1981).

Everett Rogers (1983) clearly stated that interpersonal contact is vital to complete the innovation adoption process for late adopters and "laggards." This is where small-group education plays a role.

In Honduras and in other parts of Latin America, birth spacing and family size is a concern primarily of adult women, many of whom have had little schooling. Under these circumstances traditional classroom teaching styles, most of them with children in mind, are not appropriate to the population of interest.

Carl Rogers' (1983) and Paulo Freire's (1985) approach to the educational process is especially appropriate for adult education and to the small group and personal interactions called for by Everett Rogers (1983) as necessary to promote adoption of family planning. From C. Rogers' perspective the main goal of education was facilitation of learning, an accomplishment Rogers felt rested in the attitudinal quality of the personal relationship between the educator and the learner. First of all, the learning environment must have a climate of trust where learners play a participatory role in decision making and are helped to build self-esteem and confidence. Both Carl Rogers and Freire recommended that the learning facilitator or educator exhibit empathic understanding toward her learners such as understanding students from their own point of view, which leads to their feeling appreciated. The successes attributed to Rogers' and Freire's humanistic approach may be related to reducing defensiveness associated with the abrupt confronting of learners' existing beliefs and would appear also to fall in line with reducing perceived intent to change others which, as stressed by Salomon (1981), would increase resistance to change.

Family Planning Education

These would be the objectives of a family planning education program for the study population:

1. Increase the number of family planning adopters and decrease the number of discontinuers and resistors.

2. Reduce women's fears of family planning methods by providing information and addressing negative beliefs.

3. Address the learning needs expressed by the study population.

Learning Needs Stated by the Study Population

The interview instrument addressed the questions which Carl Rogers and Freire recommended that the facilitator ask of learners. The respondents stated their fears, what they wanted to know, and what puzzled them. Possibly in a small-group educational setting such as in a clinic, similar concerns would be expressed by other indigent women. But in addition to being prepared to address expected concerns, an educator must be flexible if a group's expressed needs differ from what was expected.

Explicitly stated these were the learning needs of the study population:

1. To learn about what birth control methods are available as alternatives to the contraceptive pill.

2. To learn of "harm," permanent or temporary, associated with various contraceptive methods.

3. To learn why some women experience side effects from birth control pills while others do not.

4. To learn how to take the contraceptive pill.

Additional Learning Needs of the Study Population

In addition to expressed educational needs other family planning information needs were not fully recognized or not articulated by the study participants. For instance, they were lacking in "principles" knowledge with regard to hormonal contraceptives. Because basic knowledge of reproductive physiology was lacking, the interviewees did not understand how the contraceptive pill or injections worked and had exaggerated fears of some of their side effects.

The following objectives relate to the learning needs of the study population that were not expressed by the interviewees but were evident from their responses to the study questionnaire:

1. Decrease moral conflict concerning family planning.

2. Increase basic understanding of female reproductive physiology, specifically, the menstrual cycle, ovulation, and the effect of lactation on ovulation.

3. Increase understanding of how the contraceptive pill works.

4. Increase understanding of the physiology of pregnancy with emphasis on the negative health consequences of multiple pregnancies, closely spaced pregnancies, and pregnancies for older women.

5. Increase understanding of the contraceptive pill side effects that are similar to the normal physiological effects of pregnancy.

6. Increase general understanding of how different varieties of contraceptive pills are similar and how they are different.

7. Increase understanding of how the contraceptive pill should be taken.

8. Increase awareness of family planning methods and combinations of methods that can be used during lactation.

9. Dispel the prevalent unfounded rumors related to family planning methods.

Educational Objectives and the Innovation-Decision Process

The theories of learning, the educational content, and the educational process recommended herein can be integrated with Everett Rogers' model of diffusion of innovations.

Knowledge stage

Rogers distinguished between general awareness knowledge, "how-to" knowledge, and principles knowledge.

General awareness knowledge. The following program objectives would fall under general awareness knowledge:

1. Learning what family planning methods are available as alternatives to the contraceptive pill.

2. Increasing awareness of contraceptive methods and combinations of methods that can be used during lactation.

How-to knowledge. The following program objectives address how-to knowledge:

1. Increase understanding of how the contraceptive pill should be taken.

2. Increase general understanding of the commonalities and the differences between the various contraceptive pills.

Principles knowledge. The following objectives address the need for principles knowledge:

1. Increase basic understanding of female reproductive physiology, specifically, the menstrual cycle, ovulation, and the effect of lactation on ovulation.

2. Increase understanding of how the contraceptive pill works to suppress ovulation.

3. Increase understanding and acceptance of the harmless contraceptive pill and injection side effects.

4. Increase understanding of the physiology of pregnancy and how contraceptive pill effects are similar to those of pregnancy.

5. Increase general understanding of how different varieties of contraceptive pills are similar and how they are different.

The persuasion stage

At this stage of the innovation-adoption process the potential adopter assesses the compatibility, relative advantage, and complexity of the innovation.

An important point is the fact that information must be presented to women as information that they, at least partly, already know. In this way "compatibility" is greatly enhanced and new information is less likely to be resisted. After educators remind the women of what they have already observed, they should relate new information to knowledge the learners had before attending the program. For example, interviewees' responses to the study instrument demonstrated that they were aware of many of the health risks attending to multiple pregnancies and closely spaced pregnancies, yet 80% of the interviewees stated that some methods of family planning were more dangerous than pregnancy or childbirth. The teachers must put the health risks of family planning methods into perspective with the health risks of pregnancy/childbirth that women are already aware of.

The learning objectives proposed in this study would be expected to increase the perceived relative advantage of family planning in the following ways:

1. In pointing out the negative health consequences of multiple pregnancies, closely spaced pregnancies, and pregnancies for older women, the alternative to family

planning for women in union, pregnancy, may take on a less benign evaluation.

2. Stressing that the side effects of contraceptive pills are similar to uncomfortable but normal effects of pregnancy can minimize the perceived disadvantage of contraceptive pills.

3. In understanding the basic physiology that underlies the effectiveness of the pill, benign effects such as scanty periods become less threatening. This could decrease the perceived disadvantage of using the contraceptive pill.

Compatibility of family planning with existing values might be increased in the following ways:

1. Decreasing women's moral conflict with family planning could be done by pointing out that when the Bible was written, women needed to have many children so that a few would survive. Vaccinations, antibiotics, and sanitation have resulted in relatively few children dying. This means that unless women take steps to prevent pregnancy, they have a good chance of ending up with more children than they want or can care for.

Since moral conflict is a critical issue, the argument for limiting births must have credibility. Credibility might be achieved by asking learners to recall conditions (from family stories) from which people/children of their parents' and grandparents' generation died. Pneumonia, malaria, yellow fever, poliomyelitis, diphtheria, pertussis, and even the diarrheal diseases are far less threatening to life today than they once were.

2. The compatibility of family planning with existing values might also be increased by relating its advantages to cherished family ideals. A "good" mother is generally viewed as one who concerns herself with having well fed, healthy children. In addition, mothers are, today, increasingly concerned with educating their children.

The compatability of family planning with existing beliefs and values could be further reinforced by reiterating interviewees' statements of the disadvantages of closely spaced pregnancies and multiple pregnancies. This could remind a group of women similar to the study group of what they already know. For example, the study interviewees stated the following facts based on their own observations:

a. Closely spaced children are often born underweight, are more sickly, and more die than those children with at least 3 years of spacing.

b. Closely spaced pregnancies can pose serious health risks to the mother. In addition, there are less serious, but debilitating effects such as anemia. In the words of the study participants, "women become weak, sick, wasted, tired, old."

c. A mother can give spaced children better attention. Also, a mother cannot carry two young ones.

d. Purchasing milk for more than one child is very expensive. Food prices have gone up and jobs are scarce.

e. Educating one's children is expensive. There are tuition costs, uniform costs, and the cost of books and notebooks.

The perceived complexity of family planning could be decreased by providing simple explanations of

1. The female reproductive cycle.
2. The physiologic effects of pregnancy.
3. How the contraceptive pill relates to the reproductive cycle and how it is similar to pregnancy.
4. How to take the pill.
5. How the different brands of pills are similar and how they differ from each other.

Decision stage

The decision stage could be reinforced by family planning education that increases the perceived advantage and compatibility of family planning with existing values such as the nutrition, health, and education of children. Decreasing exaggerated fears of contraceptive side effects through a better understanding of principles knowledge could also further support the decision stage.

Confirmation stage

Family planning adopters might have their decision confirmed by reinforcing information aspects that support the decision stage. For instance, concerns and fears must be addressed as these will recur and new concerns may emerge. Confirmation might be further supported if the educator is a married women who has used family planning methods and can speak of their benefits from her own experience.

Program Evaluation

The first step in evaluation is to obtain an objective baseline measure. Population growth rates for the country are known. These rates are obtained by scientific studies conducted nationally. However, the impact of an educational program confined to a small geographic area is not likely to be reflected in national birth rates.

An educational program evaluation must address the program objectives. Usually the main objectives of family planning education are to increase the number of family planning adopters and decrease the number of discontinuers. In the La Ceiba area family planning education was delivered at the public primary care clinic and at neighborhood clinics. In order to measure the impact of a new educational program, it must be conducted at a clinic that keeps fairly accurate statistics of adopter rates and discontinuance rates. Other objectives, such as to decrease fears of contraceptive methods and to address learning needs, could be more difficult to measure. Evaluation of these objectives may depend on program participants' verbal responses as to whether they felt less fearful or whether their questions had been answered. Even then, cultural conditioning may mitigate against an accurate assessment. Indigent Central Americans might consider an expression of dissatisfaction with an educational session as "ugly" and disrespectful. In any case, the success of an educational program should be reflected in higher clinic adoption rates and lower discontinuation rates.

CHAPTER VII
CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine the extent to which Rogers' model of diffusion of innovations explained differences between family planning adopters and family planning resistors in a sample of indigent Honduran women.

Rogers' model of diffusion of innovations explained the characteristics of innovations that were readily adopted and the characteristics of those that were difficult to adopt. The innovation in this study was family planning for indigent women in Honduras.

Major Findings

By its very nature as a preventive measure, family planning is a difficult-to-adopt innovation. This was particularly so in Honduras because the methods were perceived to be injurious to health, and therefore the perceived advantage of family planning was often outweighed by its perceived disadvantage. On the other hand, the events to be prevented, another pregnancy and birth, was perceived as less injurious to health than the use of family planning methods.

Another emotional cost inherent in family planning in Honduras was the moral conflict it presented. Close to half of the sample population (of which nearly half were non-Catholics) stated that family planning presented at least a moderate moral conflict for them.

From the perspective of the study participants, family planning had a third characteristic that mitigated against its adoption. Thirty-six percent of the interviewees, some of whom had attempted to adopt a planning method, felt that family planning was too difficult to carry out. Rogers' model explained that perceived complexity was the single most predictive factor for low adoption of innovations.

In sum, because of its preventive nature, the advantages of family planning are rendered less visible. In addition, indigent Honduran women had perceptions of family planning that made it appear nonadvantageous: (1) family planning presented a moral conflict, (2) birth control methods were felt to be a greater threat to health than additional pregnancies, (3) the use of planning methods was viewed as complex, and the hormonal methods, particularly the contraceptive pill, were poorly understood in terms of how to use them and what their side-effects meant. As the model predicted of poorly understood innovations, the pill was used incorrectly and high failure rates were associated with its use. Also as the model predicted of poorly understood innovations, rumors about the available contraceptives were rampant. High failure rates and negative rumors may have contributed to uncertainty about the advantages of family planning methods leading to its low adoption.

Differences between Adopters and Resistors of Family Planning

Women in the upper and middle class of Honduras adopted family planning methods over a generation ago. For those groups family planning was no longer an innovation. The sample population for this study was indigent mothers; therefore, it was confined to those groups, the disadvantaged, more isolated, and less educated, that are generally late adopters of innovations. As such, the differences between family planning adopters and resistors were not as great as would be expected in a comparison of early adopters and late adopters. Differences between family planning adopters and resistors were further blurred because a large proportion of the study sample (72%) consisted of women under 30 years of age, many of whom were experiencing their first childbirth, and had not felt a need for family planning. Therefore, a number of mothers who were classified as innovation "resistors" may not have been true resistors and may not have shared the characteristics of true resistors.

Research Question One

Family planning adopters and resistors did not differ on the number of public media sources they were exposed to (change agent contact) or on the number of family planning messages recalled as having been heard over the public media.

This finding may have been related to the fact that the study participants were residents of an urban area and family planning messages were frequently broadcast over radio and television.

Research Question Two

As predicted by the innovation-adoption model, family planning messages that had a commercial intent were less well received than others. Interviewees agreed significantly more with public media family planning messages that conveyed a public health or family well-being objective as opposed to commercial messages or anti-method messages.

Research Question Three

Ninety-seven percent of the interviewees were in favor of family planning to space births and to prevent unwanted pregnancies; therefore, there was no difference between adopters of planning methods and resistors of these methods. Also no difference existed between the two groups on perceived approval of others, because few significant others were perceived as disapproving of family planning.

Research questions four, five and six, which follow, measured differences in the perceptions of uncertainty and advantage of using family planning methods between adopters of planning methods and resistors of those methods.

Research Question Four

Family planning adopters and resistors differed as to negative beliefs. Adopters had significantly more negative beliefs than resistors. The number of negative beliefs per method increased as the use of methods increased. This may have been because side effects related to planning methods were more relevant to present and past method users. As part of the decision and confirmation stages of the adoption process, adopters may have more actively sought information from peers, and by virtue of their own contraceptive experiences, may also have had more information to give. Another explanation for the larger number of negative beliefs held by family planning adopters may be related to the large number of side effects and negative experiences reported by pill and IUD users. Incorrect use of the pill may have led to overdosing and consequent side effects as well as high pregnancy rates. IUD users had experienced expulsion, high pregnancy rates, painful punctures, and symptoms of pelvic inflammatory disease.

Research Question Five

Contraceptive pill adopters and resistors did not differ by belief in the pill's effectiveness. This may be because many of the young mothers believed the pill was effective but had not yet felt a need to use a family planning method. A significant difference existed in future intention to use the pill by belief in its effectiveness. In addition, 90% of current pill users felt it was effective; none of them felt it was ineffective.

Research Question Six

Adopters, discontinuers, and resistors of the pill did not differ significantly by belief in its potential harm to health. This finding may be related to the fact that many women perceived that the contraceptive pill was harmful to their health but were not aware of, or had not considered, another birth control method. In addition, because many pill users had taken the pill incorrectly (for instance, taking more than one a day) this may account, in part, for the great number of complaints about side effects.

Research Question Seven

With regard to social-psychological variables adopters of family planning were different from resistors only in communication with spouse. Significantly more adopters had communicated with spouse/partner regarding family planning than had resistors. Contrary to the prediction of innovation adoption model, no difference existed between family planning adopters and resistors by religiosity, educational aspirations for children, or fatalistic outlook. The lack of differences between the groups on educational aspirations for children may be related to the large number of resistors who were young mothers. A finding of this study was that interviewees under 30 years of age had much higher educational aspirations for their children than did women over 30 years.

Research Question Eight

As predicted by the innovation-adoption model, family planning adopters and resistors differed on socio-demographic variables. Resistors had significantly less schooling, were significantly more likely to be in consensual unions than married, had had significantly more pregnancies, had significantly more living children and had experienced significantly more child deaths.

Additional Findings

1. Forty-seven percent of the interviewees stated that family planning was at least somewhat against their religion. Of the 45 women who stated they were non-Catholics, 40% stated family planning was against their religious values. Thus it appears that the concept of family planning as sinful may be part of the Honduran culture.

2. Fifty-five percent of the respondents felt that family planning was good; 39% felt it was a mix of good and bad, and 5% felt it was all bad. Of the 43 interviewees who stated family planning conflicted with their religious values, 22 (51%) evaluated planning as good, 17 (40%) stated it was a mix of good and bad, and 4 (9%) stated family planning was all bad. Of the 21 study participants who evaluated family planning as good and bad or all bad, 7 (33%) gave moral reasons, and 14 (67%) gave threat to health reasons for their negative evaluation of family planning.

The study findings corroborate the conclusions of some other investigators. As predicted by E. Rogers' (1983) model of diffusion of innovations, resistors of family planning appeared to be more disadvantaged than adopters. The former had fewer years of schooling, were more likely to be in consensual unions than married, and had experienced more child deaths. Also consistent with other studies, a positive attitude toward the idea of family planning prevailed, but this did not carry over to adoption of family planning. These are some findings that are consistent with previous studies:

1. The influence of the Catholic Church on family planning behavior appeared to be weak. No difference existed between the number of adopters and resistors by religious affiliation.

2. It was the adopters of contraceptive methods, rather than the resistors, who held the most contraceptive negative beliefs.

3. As in other developing countries, the prevalence of negative contraceptive experiences was high as was the rate of contraceptive failure and discontinuance.

Summary of Educational Implications and Recommendations

Family planning education should be carried out employing the educational process advocated by both Carl Rogers and Paulo Freire. Theirs was a humanistic approach that pivoted on the learners' point of view and underscored

---

the importance of knowing the values, beliefs, and fears of the target population.

New information must be presented in the context of what women already know. This approach increases the learning facilitator's credibility and could also reduce "perceived intent to change others" which, according to persuasion theory, tends to increase resistance to change.

The study participants' acceptance of the idea of family planning to avoid unwanted pregnancies may indicate that they have been persuaded that family planning is desirable. This might be attributed to the frequently broadcast family planning messages over the television and radio. However, a large proportion of the mothers interviewed were not practicing any family planning methods. To complete the innovation adoption process, face-to-face interaction with a change agent may be indicated. The change agent or educator should be heterophillous with learners in terms of her knowledge of family planning but homophilous as possible in socio-economic class. In addition, the educator should be an older woman with children and should be able to speak of her own successful experiences with family planning.

Ten specific learning needs were identified from the study participants' responses and spontaneous comments. These are outlined in Chapter VI.

The following recommendations flow directly from the findings of this study and statements made by the study participants.

1. Family planning education must be conducted in the idiom of the local people. Attempts should be made to lower the professional or "status barrier that frequently exists between health care providers or educators and patients. Some women's health care clinics in the United States have espoused the philosophy of health care for women (equals) by women and might serve as good models. A major strength of these clinics is that the health care providers are mostly women and are willing to speak of their own family planning experiences.

2. Family planning education must address the moral conflict that contraception presents to the indigent. Close to half of the study group stated that family planning presented at least a moderate moral conflict. One way to ease moral conflict would be to present simple explanations of its roots. The educationally disadvantaged must be made aware that in the days when the bible was written, so many infants and children died that for some to survive, it was essential that many be born. But today, with vaccinations, good drinking water, antibiotics, and oral rehydration, far less children die, and so it is necessary that couples give birth to fewer children. This explanation must be made convincing with concrete examples. Many young Honduran

adults most likely can remember stories of family members who died at a young age from conditions that are rare today such as malaria, poliomyelitis, and pertussis.

3. The concept of family planning must be placed within a context that is compatible with cultural values. Some study participants volunteered that they liked best those birth control pill messages that focused on the well being of the family. The advantages of family planning should emphasize its benefits to the family. For example:

> Children that are born with at least 2 years of spacing are healthier at birth and get sick less.
>
> Children of small families get better attention.
>
> Milk and other foods are very expensive today--children of small families can be better fed.

4. Family planning educators should highlight benefits that are relevant to the concerns of the target population. Given the prevalence of financial concerns and high educational aspirations the study participants had for their children, it would be useful for family planning educators to point out that a benefit of family planning is having fewer children who can be better educated. This message is already being delivered over the radio but should be reinforced in other approaches aimed to motivate women to limit family size.

Family planning educators should remind women that they have high aspirations for their children and at the same time remind them of what they already know--the cost of tuition, uniforms, and books is high. The costs of education are a fact that many couples do not consider until faced with them--a time when family size is already completed. A message of this type might bring concern for educating the children to consciousness in women who had not thought about it. Women who previously have passively accepted that their children would not finish primary school might start thinking that a "good mother" (a widely cherished ideal) is concerned about her children's education.

6. The perceived health risks attributed to contraceptive use must be reduced by increasing women's understanding of how methods work, particularly the hormonal methods. Such an understanding presupposes some basic knowledge of reproductive physiology. It is essential that women understand events of the menstrual cycle as they relate to the contraceptive effects of birth control pills and common side effects. Specifically, scanty periods and breakthrough bleeding should be presented as harmless physiological changes. In addition, it would be helpful if women knew that nausea occurs as a side effect of pills for similar reasons that it occurs in pregnancy, and that side effects usually do not least beyond the first few months of taking contraceptive pills.

7. The perception that contraceptive use is difficult or complex must be changed. Thirty-six percent of the study participants felt that family planning was too difficult to

carry out, and there was confusion as to how to take the contraceptive pill. A source of confusion was that many different brands of pills are available from local drug stores but do not contain instructions. Both the number of pills and variety of colors in a packet varied by manufacturer. Some women thought that each day a pill of each different color should be taken. Thus they were overdosing for part of the cycle and ran out of pills the remaining time. Family planning educators must issue clear instructions as to how to take the pill. These instructions may need to be repeated several times, and women's understanding of them should be confirmed. Specifically, the instructions should cover

a) how to take the pill on daily basis throughout the menstrual cycle;

b) what to do if one dose is missed and what to do if more than one dose is missed;

c) side effects that should be reported to a health care provider.

In addition, a brief explanation of how and why different brands of pills differ might be helpful in eliminating confusion on how to take contraceptive pills.

8. Family planning education must include some discussion of lactation as an unreliable method of birth control. The belief that pregnancy cannot occur during lactation is fairly common. In addition, there is a tendency

to give infants supplemental feedings, a practice that further increases the risk of pregnancy. Again, educational programs should build on what indigent women already know--many have observed that relatives or neighbors become pregnant during lactation.

9. Information must be made available about alternatives to birth control other than the contraceptive pill. Low-dose pills considered to be medically safe for lactating women are not known in the area. Therefore, there is need for information on alternative methods or combinations of methods to use during lactation.

Consideration should be given to introducing the diaphragm. This method was unheard of to the study participants. A few years ago, the diaphragm may have been culturally unacceptable, but the fact that women are now experimenting with contraceptive vaginal suppositories suggests that insertion methods are no longer taboo.

In sum, mass media family planning messages have informed indigent Honduran women of the availability of some modern birth control methods. However, as predicted in the Rogers' diffusion of innovations model, mass media information on the availability of family planning methods has not resulted in large-scale adoption of methods. A different kind of educational program may be needed to complete the knowledge stage and the persuasion stage of the innovation adoption process. This study suggests that specific areas of confusion and conflict must be addressed in order to bring about the adoption and sustained implementation of family planning methods by the indigent population.

APPENDIX A
HONDURAS: FAMILY PLANNING RADIO MESSAGES

A child is the most marvelous thing in life and fills the home with happiness if it is the product of a responsible decision by the couple. The happiness and wellbeing of their family depends on them. Protect yourself with Guardian, the practical and dependable masculine contraceptive. Get Guardian in drugstores, supermarkets, and vanasupros for only [approximately] $0.55 for the small box of three.

Family planning is also the responsibility of the men. A man of responsibility and forethought uses Guardian, the practical and dependable contraceptive that protects the happiness of the couple. Ask for Guardian in drugstores, supermarkets, and vanasupros for only [approximately] $0.55 for the small box of three.

Female narrator: Julian, listen to this good news. Now Norminez is sold in drugstores for only [approximately] $0.80 for the monthly cycle. Great! I have finished the cycles that the doctor gave me and I want to continue family planning with Norminez.

Male narrator: The tablets of low doses are more adequate for young women who have never taken contraceptives. Normines is of low dose and for that reason its ingredients are better tolerated by one's organism. Normines--now at your drugstore.

[Singing] A small family lives better!

Good news for you, young women who have never taken contraceptives. Normines is a tablet of low dose, and tablets of low dose are the most harmless that you can take for family planning. They are better tolerated by your system. We suggest that if it is the first time you are going to practice family planning, it is always better to consult your physician. Take Normines. Do it confidently. Normines, the tablet of low dose.

[Singing] A small family lives better!

All contraceptive tablets may cause discomforts during the first few months of use. But these discomforts promptly disappear after the third or fourth month and they cannot compare with the problems caused by lack of family planning in the home, in the mother's body, in the child that is born. These problems may affect you for the rest of your life. Practice family planning with Perla.

[Singing] With Perla you can decide how many to have.

Would you be capable of risking the life of your future child? Pregnancies before 18 years of age and after 35; pregnancies after having had four children, and pregnancies with less than two years of spacing place in danger the life of the child and the mother. The shorter the time between pregnancies the greater the risks of mortality. If you are not physically fit for maternity, wait for a better time. Practice family planning. Space your pregnancies.

[Singing] With _Perla_ you can decide when you want to have them.

Get your _Perla_ cycle for only approximately $0.60.

APPENDIX B
THE INTERVIEW INSTRUMENT

RUMORS, NEGATIVE BELIEFS, MISCONCEPTIONS, AND ATTITUDES TOWARD FAMILY PLANNING OF INDIGENT HONDURAN WOMEN

Emita Doherty
Fall, 1988

Demography and Actual Reproductive History

DK = Don't know
NA = Not applicable

DO NOT OFFER "DON'T KNOW" OR "UNCERTAIN" AS A RESPONSE ALTERNATIVE.

Question

100 The motivation for this study is to improve conditions for women and children. Can you think of any important problem that affects women like yourself with regard to the number of children they have?

101 How old were you in years on your last birthday?

18-19 1
30-39 2
40-49 3

102 Are you now:

Married 1
In concensual union 2
Visiting union 3
Not in union 4

NOTE: IN THE QUESTIONS THAT FOLLOW USE THE TERM "HUSBAND" OR "COMPANION" INSTEAD OF "PARTNER" ACCORDING TO RESPONDENT'S MARITAL STATUS.

103 How long have you been in this union?

Months_________ Years _________

Question

104 What is the highest grade in school which you have completed?

Never went to school	1
Grade one to three	2
Grade three to six	3
Secondary one to three ...	4
Secondary four to six	5
Above secondary	6
Other	8

____

DK	9

105 Occupation __________________

Street or market vendor ..	1
Domestic help	2
Factory or other worker ..	3
Unemployed	4
Other	8

____

106 Of what religion are you?

Catholic	1
Protestant	2
Other	8

____

No preference	4

107 Would you say that you attend church?

Weekly	1
About once a month	2
Once a year or less	3

Now I would like to ask you some questions about your children.

108 Number of pregnancies ____________

109 Number of miscarriages or stillbirths ________

110 Number deceased ____________

111 Number of children still living ____________

Beliefs and Values: Family Size, Childbearing, and Fertility Regulation

Question

112 Do you have all the children that you want or would you like to have more children?

Wants no more children ...	1
Wants more	2
Up to God	3
Other	8
Specify _____________	
DK	9

113 How many children would you like to have?

____

114 What effect on a family's economic condition does adding more children have?

Increases economic difficulty	1
Increases well-being	2
It does not make any difference ..	3
DK or Can't Decide	9

115 What level of education would you like your children to have?

No school	1
Grade one through three ..	2
Grade four through six ...	3
Secondary one to three ...	4
Secondary four to six	5
Other	8
_____________________	
DK	9

116 What level of schooling would you like for your female children?

No school 1
Grade one through three .. 2
Grade four through six ... 3
Secondary one to three ... 4
Secondary four to six 5
University 8

____

DK 9

Question

117 Do you think that many pregnancies can be harmful to a woman's health?

Yes 1
No 2

DK 9

118 How many pregnancies do you think that a woman can have without them being harmful to her health?

____

119 How are lots of pregnancies harmful to a woman's health?

____

____

____

120 What do you think is the ideal spacing between children?

Years __________

DK 9

121 Why did you respond as you did?

____

____

122 Is there an age after which pregnancies can be problematic?

Yes 1
No 2

123 If you think that there is an age after which women should no longer have children, what age is that?

____

124 What might happen if a woman had children after that age?

____

____

I am going to read you some statements and, after each one, I will ask you if you agree strongly, agree moderately, disagree moderately, or strongly disagree.

Do not offer "not sure" or "no information" as response alternatives, but circle them if they apply.

Strongly agree 1	Strongly disagree 4
Moderately agree 2	No information 8
Moderately disagree 3	DK 9

Question

125 When a person is born, his destiny is already determined, therefore one should accept it.

.....1.....2.....3.....4..........8.....9.....

126 It is a good idea to practice family planning in order to space pregnancies so that children are not born too close together.

.....1.....2.....3.....4..........8.....9.....

127 It is a good idea to practice family planning in order to limit family size.

.....1.....2.....3.....4..........8.....9.....

128 Some family planning methods are more harmful to a woman's health than pregnancy or childbirth.

.....1.....2.....3.....4..........8.....9.....

129 Having an abortion can make a woman sick enough that she could die.

.....1.....2.....3.....4..........8.....9.....

130 Most women would rather have an abortion for an undesired pregnancy than have to use a contraceptive regularly.

.....1.....2.....3.....4..........8.....9.....

131 A woman can limit her family size to any number that she chooses.

.....1.....2.....3.....4..........8.....9.....

Question

132 Couples who want to avoid pregnancies should use family planning methods.

.....1.....2.....3.....4..........8.....9.....

133 Taking measures to prevent pregnancies is too difficult.

.....1.....2.....3.....4..........8.....9.....

134 Couples with good jobs and income practice family planning.

.....1.....2.....3.....4..........8.....9.....

Exposure to Mass Media and to Family Planning Messages

Question

135 Have you heard or seen any family planning messages urging women or men to use family planning?

Yes, have heard 1
No, have not heard 2
DK, don't remember 9

136 Where or from what sources did you see or hear these messages?

Radio 1	Newspapers 4
T.V. 2	Magazines 5
Posters ... 3	Other (specify)... 6
	____________________

Question

Record the message recalled on the left. Then, for each message recorded, ask for gender of narrator and belief in the message.

137 What messages do you recall hearing?

138 Of what gender was the nattator of the message?

139 Do you believe the message?

137 138 139	M	F	Y	N
v ____________________	1	2	1	2
v ____________________	1	2	1	2
v ____________________	1	2	1	2
v ____________________	1	2	1	2
v ____________________	1	2	1	2

Question

140 Which messages do you believe the most?

141 What is in these messages that you agree with?

142 Which message(s) do you believe the least?

143 What is it in these messages that you disagree with?

Exposure to the Media

How often do you do the following?

144 Read the newspaper

daily 1	rarely ... 3
once a week ... 2	never 4
	NA 5

145 Listen to the radio

daily 1	rarely.... 3
once a week ... 2	never 4
	NA 5

146 Watch television

daily 1	rarely ... 3
once a week ... 2	never 4
	NA 5

147 Read magazines

daily 1	rarely ... 3
once a week ... 2	never 4
	NA 5

Perceptions of Acceptability of Family Planning

Question

148 Have you and your spouse ever talked about using some method of family planning?

Yes 1
No 2

149 What means of preventing pregnancy which he could employ do you think that your husband (or companion) is aware of?

[CIRCLE ONLY METHODS THAT ARE MENTIONED SPONTANEOUSLY; DO NOT PROMPT]

Condom	1
Male sterilization ...	2
Withdrawal	3
None of the above	4
Other	8
DK	9

150 Of the methods you mentioned your husband (or companion) is aware of, which one do you think that he would be willing to employ?

Condom	1	Mentioned one method	5
Male sterilization .	2	Mentioned two methods	6
Withdrawal	3	Mentioned three methods	7
None of the above ..	4		
Other	8		

Specify ______________

DK	9

151 What methods that you could employ to avoid births do you think your husband (or companion) is aware of?

[CIRCLE ONLY METHODS MENTIONED SPONTANEOUSLY; DO NOT PROMPT]

Pill	1	None of the above	10
IUD	2		
Injections	3	DK	9
Tubal ligation	4		
Diaphragm	5	Mentioned one method	11
Creams, jelly, foam.	6	Mentioned two methods	12
Rhythm	7	Mentioned three methods ..	13
Other (specify)	8	Mentioned more than three.	14

Question

152 You mentioned that your husband (or companion) is aware of _____________ for family planning. What methods that you could use do you think he would approve?

Pill	1
IUD	2
Injections	3
Tubal ligation	4
Diaphragm	5
Creams, jelly, foam	6
Rhythm	7
Other (specify)	8

____

None of the above	10
DK	9
Mentioned one method	11
Mentioned two methods	12
Mentioned three methods	13
Mentioned more than three	14

I am going to read a list of persons whose opinions you may respect. Please tell me if you think that each person would approve or would disapprove or would not care either way about your using family planning.

Would approve	1
Would be neutral	2
Would disapprove	3
Relative not applicable	4

Question

153	Spouse	1	2	3	4
	Mother	1	2	3	4
	Closest sister	1	2	3	4
	Best friend	1	2	3	4

154 Would it be against your religious beliefs to practice family planning?

Very much against	1
Somewhat against	2
No conflict with beliefs	3
DK, no response	9

155 Do you think that family planning is:

Good	1
Mix	2
Bad	3
DK	9

Question

156 Why do you think that it is _________?

____

____

[IF THE RESPONSE WAS DK, ASK THE RESPONDENT WHAT SHE THINKS OTHER PEOPLE WOULD SAY TO THAT QUESTION.]

Awareness of Methods, Current Use, and Perceived Effectiveness

Question

157 Do you think that there is a need for women to know more about family planning, or do you think that they have all the information they need?

Need to know more 1
No need for more information ... 2

From the radio, T.V., posters, and other sources, what methods of preventing pregnancy do you know of?

158 CIRCLE METHODS MENTIONED SPONTANEOUSLY IN THE LEFT HAND MARGIN.

159 FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK ABOUT EACH OF THE METHODS ON THE LIST AND CIRCLE THOSE KNOWN IN THE SECOND COLUMN.

160 FOR METHODS KNOWN, EITHER SPONTANEOUSLY OR WITH A REMINDER, ASK:

Have you or your partner ever used the (name of method) to postpone or prevent pregnancy?

RECORD THE RESPONSES IN THE TWO RIGHT HAND COLUMNS OF THE WORKSHEET BELOW.

		158	159		160	
	Method	Mentions Spontaneously	Has heard of	has not heard of	Has used	Has never used
v	1. Pill	1	1	2	1	2
v	2. I.U.D.	1	1	2	1	2
v	3. Injections	1	1	2	1	2
v	4. Tubal ligation	1	1	2	1	2
v	5. Condom	1	1	2	1	2
v	6. Male sterlization	1	1	2	1	2
v	7. Diaphragm	1	1	2	1	2
v	8. Creams, jelly, foam	1	1	2	1	2
v	9. Vaginal suppositories	1	1	2	1	2
v	10. Rhythm	1	1	2	1	2
v	11. Withdrawal	1	1	2	1	2
v	Other ________ ______________	1	1	2	1	2

Question

161 Which method are you currently using?

Method	Currently using	Not currently using
Pill	1	2
Intrauterine device	1	2
Contraceptive injections	1	2
Diaphragm	1	2
Vaginal tablets	1	2
Creams, jelly, or CPT foam	1	2
Condom	1	2
Rhythm	1	2
Withdrawal	1	2
Male sterilization	1	2
Tubal ligation	1	2
Other	1	2

162 If you started taking the pill within the past few years, how many continuous cycles have you taken? ____________

163 If a discontinuous method is being used, is it being used at least 50% of the time?

Yes 1
No 2

I am now going to ask how reliable each method is.

By this I mean, how effective it is in preventing pregnancy.

[ASK ONLY METHODS THAT RESPONDENT KNOWS]

164 How reliable (effective in preventing pregnancy) do you think the (name) is? (See worksheet below)

Question

FILTER: Ever used a method 1
Never used a method 2
(skip to Qn)

Question

164

Method	Very reliable	Moderately reliable	A little unreliable	Very unreliable	Does Not know method	Don't know
1. Oral pill	1	2	3	4	5	9
2. Intra-uterine device (IUD)	1	2	3	4	5	9
3. Injections for contraception	1	2	3	4	5	9
4. Diaphragm	1	2	3	4	5	9
5. Foaming vaginal tablets	1	2	3	4	5	9
6. Creams, jelly, foam for contraception	1	2	3	4	5	9
7. Condom	1	2	3	4	5	9
8. Rhythm	1	2	3	4	5	9
9. Withdrawal	1	2	3	4	5	9
10. Female sterilization	1	2	3	4	5	9
11. Male sterilization	1	2	3	4	5	9
12. Other ____________	1	2	3	4	5	9

Question

165 How harmful for a person's health is it to use this method?

Method	Very harmful	A little harmful	Not harmful at all	Does Not know method	Don't know
1. Oral pill	1	2	3	5	9
2. Intra-uterine device (IUD)	1	2	3	5	9
3. Injections for contraception	1	2	3	5	9
4. Diaphragm	1	2	3	5	9
5. Foaming vaginal tablets	1	2	3	5	9
6. Creams, jelly, foam for contraception	1	2	3	5	9
7. Condom	1	2	3	5	9
8. Rhythm	1	2	3	5	9
9. Withdrawal	1	2	3	5	9
10. Female sterilization	1	2	3	5	9
11. Male sterilization	1	2	3	5	9
12. Other ____________	1	2	3	5	9

166 What was the last family planning method that you used which you discontinued?

____

167 Why did you stop using this method?

To become pregnant	1
Accidentally became pregnant	2
Changed to another method (specify) .	3
Health reasons (specify)	4
Disliked method (specify)	5
Other (specify)	6
________________________________	
DK	9

168 If that method was discontinued because it was disliked, what was disliked about it? (specify verbatim)

____

____

169 If for health reasons, specify ______________

____

____

FILTER: Using a method now 1
(Go to Qn. 167)
Not using a method now ... 2
(Go to Qn. 168)

170 Do you think that you will continue to practice family planning in the future?

Definitely yes 1	Possibly not 3
Possibly yes 2	Definitely not .. 4

IF RESPONDENT IS NOT NOW USING A FAMILY PLANNING METHOD, ASK:

171 Do you think that you will be using a family planning method in the future?

Definitely yes 1	Possibly not 3
Possibly yes 2	Definitely not .. 4
	DK, no answer... 9

Question

172 Where do you get information or advice about the use of family planning methods?

____

____

Beliefs and Opinions Regarding Breastfeeding

173 How effective do you think that breast feeding is for preventing another pregnancy?

Very effective	1
Somewhat effective ...	2
Ineffective	4
Other	8
DK	9

174 If a mother gives her breast-fed infant supplemental feedings, how might this affect her chances of becoming pregnant again?

It has no effect	1
It increases the chances	2
It decreases the chances	3
DK	9

175 Are there any physical signs which would indicate to a breastfeeding mother that she is no longer protected by lactation from becoming pregnant?

____

Beliefs Related to Menstruation Which Would Impact on the Acceptability of Contraceptive Side Effects

Now I want to ask you some questions about menstruation, and how you would feel about some changes in your menstrual patterns.

Question

176 If you were using a birth control method which caused you to have changes in your menstrual pattern, like a heavier flow, a lighter flow, or spotting, would this be of concern to you?

Yes 1
No .... 2 (skip to Qn. 180)

DK 9

THE FOLLOWING QUESTIONS ON MENSTRUATION SHOULD BE PURSUED ONLY IF RESPONDENT ANSWERED YES TO QUESTION 173.

177 Would having a heavier than usual flow concern you?

Yes 1
No 2

178 Why did you respond as you did? What do you associate a heavier flow with?

179 Would having a lighter than usual period concern you?

Yes 1
No 2

180 Why did you respond as you did? What do you associate with a lighter flow?

181 Would a small amount of bleeding between periods concern you?

Yes 1
No 2

182 Why did you respond as you did? What do you associate with bleeding between periods?

Beliefs and Opinions Regarding the Contraceptive Pill

Now, I would like to ask you some questions about the contraceptive pill.

FILTER: Check Qn. 157 to see if respondent has heard of the pill. yes no

IF YES, PROCEED TO QN. 190.

FILTER: Check Qn. 75 to see whether respondent has used the pill. yes no

Question

183 How do you think the contraceptive pill works to prevent pregnancy?

184 If you were to start family planning, would you consider using the pill?

Definitely yes ..... 1 (skip to Qn. 192)
Possibly yes 2
Uncertain 3
Probably not 4
Definitely not 5

DK 9

IF NO OR MAYBE, ASK:

185 What are your reasons for not wanting to use the pill?

IF RESPONDENT STATES SHE DOESN'T KNOW, PROBE--WHAT RESERVATIONS DO YOU HAVE ABOUT USING THE PILL?

____

____

____

186 Have you heard anyone say any bad things about the contraceptive pill?

yes 1
no .... 2 (Skip to Qn. 186)

DK .... 9 (Probe)

187 What bad things did you hear?

NOTE EACH RUMOR AND THEN ASK THE RESPONDENT HOW STRONGLY SHE BELIEVES EACH ONE. DO NOT OFFER "DK" AS A RESPONSE, BUT CIRCLE IT IF IT APPLIES.

	Strongly believe	Believe somewhat	Don't believe	DK
v ______________________ v	1	2	3	9
v ______________________ v	1	2	3	9
v ______________________ v	1	2	3	9
v ______________________ v	1	2	3	9
v ______________________ v	1	2	3	9

Question

188 From what sources have you heard these things?

spouse 1
relatives .. 2
neighbor ... 3
friend 4
health worker .. 5
other women 6
other 8
____

DK 9

189 Have you ever heard that women may feel sick when they first start taking the pill?

yes 1
no .... 2 (skip to Qn. 198)

DK .... 9 (skip to Qn. 198)

190 How is this sickness different from pregnancy sickness?

____

191 How long do these symptoms usually last?

For only a few days 1
For a month or two 2
For several months 3
For as long as the pill is taken ... 4
Other 8
____

DK 9

IF CANCER IS NOT MENTIONED AS ONE OF THE RUMORS HEARD, ASK:

Question

192 Have you heard anyone say that the pill causes cancer?

yes 1
no .... 2 (Skip to Qn. 191)

DK .... 9 (Skip to Qn. 191)

193 Do you believe that the pill can cause cancer?

Strongly believe 1
Moderately believe 2
Don't believe 3

DK 9

Beliefs and Opinions Regarding Tubal Ligation

FILTER: Check question 74 to see if respondent has mentioned or heard of sterilization.

Mentioned or heard ... 1
Not heard .... 2 (skip to Qn. 199)

Check question 75 to determine whether respondent has undergone sterilization.

yes 1
no 2

Question

194 How do you think sterilization works to prevent pregnancy?

Question

IF RESPONDENT HAS NOT UNDERGONE TUBAL LIGATION:

195 If you were to start family planning (or you were going to change your current method) would you consider tubal ligation?

Definitely yes 1
Possibly yes 2
Uncertain 3
Probably no 4
Definitely not 5

DK 9

196 What would be your reasons for not wanting to undergo the sterilization operation?

____

____

____

____

197 Have you heard anyone say whether sterilization has had bad effects upon women?

Yes 1
No .... 2 (skip to Qn. 197)

DK .... 9 (Probe)

198 What bad things have you heard?

Question

199 FOR EACH NEGATIVE RUMOR, ASK RESPONDENT HOW STRONGLY SHE BELIEVES EACH RUMOR. DO NOT OFFER "NOT SURE" AS AN ALTERNATIVE.

Rumor	Strongly believe	Moderately believe	Don't believe	Not sure
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4

200 From what sources did you hear those things about sterilization?

spouse 1
relatives ... 2
neighbor 3
coworker 4
friend 5
health worker ... 6
other 7
____

DK 9

Attitudes and Opinions Regarding the Intrauterine Device

FILTER: Check Qn. 157 to determine whether the respondent has heard of the IUD.

Mentioned or heard of IUD 1
Has not heard of IUD 2
(skip to Qn. 206)

201 How do you think the IUD works to prevent pregnancy?

FILTER: Check Qn. 159 to determine whether respondent is currently using the IUD.

Currently using 1
(Skip to Qn. 201)
Not currently using 2

Question

202 If you were to start family planning or change your method of family planning, would you consider using the IUD?

Definitely yes .... 1 Uncertain 3
Possibly yes 2
Probably not ...... 4 DK 9
Definitely not 5

IF THE ANSWER WAS MAYBE, NO, OR DK, ASK:

203 Why did you reply the way that you did?

____
____
____

204 Have you heard anything bad about the IUD?

Yes 1
No .... 2 (Skip to Qn. 204)

DK 9

205 What bad things have you heard?

206 FOR EACH NEGATIVE RUMOR, ASK THE RESPONDENT HOW STRONGLY SHE BELIEVES THE RUMOR. DO NOT OFFER "NOT SURE" AS AN ALTERNATIVE.

Rumor	Strongly believe	Moderately believe	Don't believe	Not sure
v ____________________ v	1	2	3	4
v ____________________ v	1	2	3	4
v ____________________ v	1	2	3	4
v ____________________ v	1	2	3	4
v ____________________ v	1	2	3	4

Question

207 From what sources did you hear those things aboutthe IUD?

spouse 1
relatives ... 2
neighbor 3
coworker 4

friend 5
health worker .. 6
other women 7
other 8
____
DK 9

Beliefs and Opinions on Injectable Contraceptives

FILTER: Check Qn. 157 to see if respondent has heard of injectables.

Mentioned or heard ... 1
Not heard 2
(skip to Qn. 213)

208 How do you think the contraceptive injections work to prevent pregnancy?

FILTER: Check Qn. 159 to see if respondent is currently using injectables.

yes ...... 1 (Skip to Qn. 209)
no 2

209 If you were to start family planning (or you were going to change your present method) would you consider injectables?

Definitely 1
Possibly 2
Not sure 3
Probably not 4
Definitely not ... 5

IF THE RESPONSE TO ITEM WAS NOT SURE, OR DON'T KNOW, ASK:

210 What would be your reasons for not wanting to use injectables?

Question

211 Have you heard anyone say that injectables had any bad effects?

Yes 1
no ...... 2 (Skip to Qn. 213)

DK ...... 9 (Probe)

212 What bad things have you heard?

FOR EACH NEGATIVE RUMOR, ASK THE RESPONDENT HOW STRONGLY SHE BELIEVES THE RUMOR. DO NOT OFFER "NOT SURE" AS AN ALTERNATIVE.

Rumor	Strongly believe	Moderately believe	Don't believe	Not sure
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4

213 From what sources have you heard those things?

spouse 1
relatives ... 2
neighbor 3
coworker 4

friend 5
health worker .. 6
other women 7
other 8
____

DK 9

Beliefs and Opinions Regarding the Diaphragm

FILTER: Check Qn. 74 to see if respondent has heard of the diaphragm.

Has heard 1
Has not heard ... 2 (skip to Qn.)

FILTER: Check An. 75 to see if respondent has used a diaphragm.

Question

214 How do you think the diaphragm works to prevent pregnancy?

215 If you were to start family planning (or were going to change your current method) would you consider using the diaphragm?

Definitely yes 1
Possibly yes 2
Uncertain 3
Probably not 4
Definitely not 5

216 IF THE RESPONSE TO ITEM WAS PROBABLY NOT, DEFINITELY NOT, OR UNCERTAIN ASK:

What would be your reasons for not wanting to use the diaphragm?

217 Have you heard anyone say that the diaphragm has any bad effects or undesirable features?

yes 1
no ...... 2 (Skip to Qn.)

DK ...... 9 (Probe)

218 What bad things have you heard?

FOR EACH NEGATIVE RUMOR, ASK THE RESPONDENT HOW STRONGLY SHE BELIEVES THE RUMOR. DO NOT OFFER "NOT SURE" AS AN ALTERNATIVE.

Rumor	Strongly believe	Moderately believe	Don't believe	Not sure
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4
v ______________________ v	1	2	3	4

Question

219 From what sources have you heard those things?

spouse 1
relatives ... 2
neighbor 3
coworker 4
friend 5
health worker .. 6
other women 7
other 8
____
DK 9

220 With about how many people have you discussed family planning? ______________

221 What did you think of this interview?

222 Is there anything else you would like to say?

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BIOGRAPHICAL SKETCH

Emita Doherty was born and reared on the north coast of Honduras. She received a Bachelor of Science in Nursing from Boston College and a Master of Science in Nursing from Wayne State University, Detroit, Michigan.

Ms. Doherty began her educational career in 1977 as clinical specialist in charge of training and supervision of nurses in the acute coronary care unit at Henry Ford Hospital in Detroit. Her desire to return to her developing country roots led her to pursue a Master of Public Health degree at the University of Michigan. There, she completed majors in health planning and economic development and population planning.

In 1984 Ms. Doherty enrolled in the College of Education at the University of Florida. While persuing the Doctor of Philosophy at the University of Florida, she supported her family working a variety of jobs: evaluating training programs for teachers of bilingual students, teaching electrocardiogram interpretation to cardiac research nurses, providing primary health care to prison inmates, and nursing in intensive care units. She has also been a primary health care provider at a women's clinic.

Upon completion of the Ph.D program, Ms. Doherty hopes to continue her work as external evaluator of teacher training programs and aspires to playing a role in designing and evaluating family planning education programs for indigent women of population-troubled developing countries.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

James W Hensel

James W. Hensel, Chairman
Professor, Educational Leadership

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Brian M. du Toit
Professor, Anthropology

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

May, 1991

David G. Smith

Dean, College of Education

Dean, Graduate School